Administrative Products
for DB2®
Installation Guide

Administrative Assistant for DB2
ALTER® for DB2
CATALOG MANAGER for DB2
CHANGE MANAGER for DB2
DASD MANAGER PLUS for DB2
UTILITY MANAGER for DB2

Version 1.7.31

May 11, 2001



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Before you contact BMC Software, have the following information available so that a technical support analyst can begin working on your problem immediately:

- product information
  - product name
  - product version (release number)
  - license number and password (trial or permanent)
- operating-system and environment information
  - machine type
  - operating system type, version, and service pack or program temporary fix (PTF)
  - system hardware configuration
  - serial numbers
  - related software (database, application, and communication) including type, version, and service pack or PTF
- sequence of events leading to the problem
- commands and options that you used
- messages received (and the time and date that you received them)
  - product error messages
  - messages from the operating system, such as `file system full`
  - messages from related software

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About This Book

This book contains detailed information about the Administrative Products for DB2. It is intended for use by the system programmer or database administrator (DBA) who will install the following BMC Software products from the Administrative Products for DB2 distribution tapes or CD:

- ALTER
- CATALOG MANAGER
- CHANGE MANAGER
- DASD MANAGER PLUS
- UTILITY MANAGER

To use this book you should be familiar with DB2, Multiple Virtual Storage (MVS) systems, job control language (JCL), and the Interactive System Productivity Facility (ISPF).

How This Book Is Organized

This book is organized as follows. In addition, an index appears at the end of the book.

Chapter/Appendix Number and Title	Description
Chapter 1, “Preparing for Installation”	describes the Administrative Products distribution tapes and the installation requirements for the products on the tapes This chapter also describes the Install System.
Chapter 2, “Using the Install System”	explains how to • unload the Install System • start and run the Install System • handle special-case installations

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Chapter/Appendix Number and Title	Description
Chapter 3, “Performing Additional Installation Tasks”	discusses how to • migrate to a new version of DB2 • upgrade from ALTER to CHANGE MANAGER • use catalog indirection with the BMC Software Administrative Products
Chapter 4, “Performing Post-Installation Tasks”	explains what you should do after installing particular BMC Software products
Chapter 5, “Installing ALTER”	explains the prerequisites and installation considerations that you should review before you install this product The chapter describes each default option and shows a sample listing for the default option module. In addition, this chapter discusses upgrading from ALTER to CHANGE MANAGER.
Chapter 6, “Installing CATALOG MANAGER”	explains the prerequisites and installation considerations that you should review before you install this product
Chapter 7, “Installing CHANGE MANAGER”	see the description for Chapter 6 In addition, this chapter explains how to use the product’s Compare component to perform a catalog to catalog comparison.
Chapter 8, “Installing DASD MANAGER PLUS”	see the description for Chapter 6
Chapter 9, “Installing the Client for ALTER and CHANGE MANAGER”	provides information about installing, configuring, and starting the client for ALTER and CHANGE MANAGER
Appendix A, “BMC Software Product Authorization”	describes the licensing of BMC Software products The Product Authorization utility from BMC Software enables online or batch authorization from the Install System tapes.
Appendix B, “BMC Software Product Authorization Messages”	explains the product-authorization messages that the Install System may generate

Related Documentation

BMC Software products are supported by several types of documentation:

- online and printed books
- online Help
- release notes and other notices

In addition to this book and the online Help, you can find useful information in the publications that are listed in the following table. As “Online and Printed Books” explains, these publications are available on request from BMC Software.

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Category	Document	Description
Product use	*Administrative Products for DB2 Messages Manual*	contains descriptions and responses for the information, warning, and error messages that the Administrative Products generate
	ALTER and CHANGE MANAGER for DB2 User Guide	explains the objects, components, commands, and keywords for the ALTER and CHANGE MANAGER products
	CATALOG MANAGER for DB2 User Guide	explains the concepts and considerations for performing tasks in the CATALOG MANAGER product
	DASD MANAGER PLUS for DB2 User Guide	explains the features and the functions of the DASD MANAGER PLUS product
	UTILITY MANAGER for DB2 Getting Started	contains information about installing, configuring, and using the UTILITY MANAGER product

Online and Printed Books

The books that accompany BMC Software products are available in online format and printed format. If you are a Windows user, you can view online books with Acrobat Reader from Adobe Systems. The reader is provided at no cost, as explained in "To Access Online Books." You can also obtain additional printed books from BMC Software, as explained in "To Request Additional Printed Books."

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In some cases, installation of the Acrobat Reader and downloading the online books is an optional part of the product-installation process. For information about downloading the free reader from the Web, go to the Adobe Systems site at **http://www.adobe.com**.

To view any online book that BMC Software offers, visit the support page of the BMC Software Web site at **http://www.bmc.com/support.html**. Log on and select a product to access the related documentation. (To log on, first-time users can request a user name and password by registering at the support page or by contacting a BMC Software sales representative.)

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To Request Additional Printed Books

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Online Help

The Product Name include online Help. In the Product Name ISPF interface, you can access Help by pressing **F1** from any ISPF panel.

Note: The messages that Product Name generate are available in an MVS data set that is downloaded during installation. For each message, the data set includes an explanation and suggests a user response. The MVS data set is called *HLQ*.MSGS (where *HLQ* is the high-level qualifier that is specified during installation). The BMCMSG CLIST can be used to view the messages.

Release Notes and Other Notices

Printed release notes accompany each BMC Software product. Release notes provide current information such as

- updates to the installation instructions
- last-minute product information

In addition, BMC Software sometimes provides updated product information between releases (in the form of a flash or a technical bulletin, for example). The latest versions of the release notes and other notices are available on the Web at **http://www.bmc.com/support.html**.

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Conventions

This section provides examples of the conventions used in this book and explains how to read syntax statements.

General Conventions

This book uses the following general conventions:

Item	Example
information that you are instructed to type	Type **SEARCH DB** in the designated field.
specific (standard) keyboard key names	Press **Enter**.
field names, text on a panel	Type **the appropriate entry** in the **Command** field.
directories, file names, Web addresses	The BMC Software home page is at **http://www.bmc.com**.
nonspecific key names, option names	Use the HELP function key. KEEPDICTIONARY option
MVS calls, commands, control statements, keywords, parameters, reserved words	Use the SEARCH command to find a particular object. The product generates the SQL TABLE statement next.

code examples, syntax statements, system messages, screen text	`//STEPLIB DD`
	
	`The table table_name is not available.`

emphasized words, new terms, variables	The instructions that you give to the software are called *commands*. In this message, the variable *file_name* represents the file that caused the error.
single-step procedures	» To enable incremental backups, type **y** and press **Enter** at the next prompt.
GUI menu sequence	Choose **File => Open**.

This book uses the following types of special text:

Note: Notes contain important information that you should consider.

Warning! Warnings alert you to situations that could cause problems, such as loss of data, if you do not follow instructions carefully.

Tip: Tips contain useful information that may improve product performance or that may make procedures easier to follow.

Syntax Statements

Syntax statements appear in Courier. The following example shows a sample syntax statement:

```
COMMAND KEYWORD1 [KEYWORD2|KEYWORD3] KEYWORD4={YES|NO}
        file_name...
```

The following table explains conventions for syntax statements and provides examples:

Item	Example
Items in italic type represent variables that you must replace with a name or value. Use an underscore for variables with more than one word.	`dtsbackup` *control_directory*
Brackets indicate a group of options. You can choose at least one of the items in the group, but none of them is required. Do not type the brackets when you enter the option. A comma means that you can choose one or more of the listed options. You must use a comma to separate the options if you choose more than one option.	`[`*table_name, column_name, field*`]`
Braces enclose a list of required items. You must enter at least one of the items. Do not type the braces when you enter the item.	`{`*DBD_name* `|` *table_name*`}`
A vertical bar means that you can choose only one of the listed items. In the example, you would choose either *commit* or *cancel*.	`{commit | cancel}`
An ellipsis indicates that you can repeat the previous item or items as many times as necessary.	*column_name* `. . .`

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Summary of Changes

The summary of changes includes enhancements to the installation application that is used to install BMC Software Administrative Products. It also includes any major changes to the documentation. The changes are listed by product version and release date.

Version 1.7.30—March 30, 2001

This installation guide provides support for the BMC Software Install System for the ISPF products and for the graphical user interface (GUI) client CD. Enhancements for version 1.7.30 include

- ability to add products that are not included on the TIS or SAT tapes to the BMCDB2PR panel
- addition of values for default processing options for the BMC Software SQL Explorer™ for DB2 product
- availability of installation guide in HTML format
- disuse of the ACVDOPTS DOPTs module
- modification of BIND packages and plans
- use of SYS1.MODGEN library by a $I40INST job during a System Modification Program (SMP) installation of MVS
- default value of the MVSTCP.HPNS variable defined as high-performance native sockets
- DB2 Version 3 no longer supported

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Version 1.6.90—September 29, 2000

This installation guide provides support for the BMC Software Install System for the ISPF products and for the graphical user interface (GUI) client CD. Enhancements for version 1.6.90 include

- distribution of the GUI for the BMC Software ALTER, CHANGE MANAGER, and SQL Explorer products on the Administrative Products for DB2 for OS/390 product CD
- the inclusion of information about installing the GUI in this installation guide
- the addition of the data editor plan with the default name of ACT*vrm*DE for the CATALOG MANAGER product
- the addition of the DOPCP, DOPRP, DOPVP, DOPLP, DOPUP, DOPKP, NOWRK, and EPLAN parameters to the default options module for CATALOG MANAGER
- the addition of the DEFERUIX parameter to the default options module for ALTER and CHANGE MANAGER
- the addition of support for the DB2 Version 5 installation of the JDSNBG parameter to the default options module for ALTER and CHANGE MANAGER
- the compilation of the Skeleton Library (SLIB) members that are customized during the installation for the JCL Generation component
- the process for upgrading from ALTER to CHANGE MANAGER
- the removal of unnecessary icons from the PATROL DB-Admin Client program group for the GUI clients

This installation guide provides documentation for the following products:

- ALTER for DB2, version 6.2.01
- CATALOG MANAGER for DB2, version 6.2.01
- CHANGE MANAGER for DB2, version 6.2.01
- DASD MANAGER PLUS for DB2, version 6.1.02
- SQL Explorer for DB2, version 3.1.03
- UTILITY MANAGER for DB2, version 1.2

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Version 1.6.50 and Version 1.6.10 (Controlled Availability)—May 31, 2000

This installation guide provides support for the BMC Software Install System. Enhancements for version 1.6.50 (and 1.6.10) of the Install System include

- support for all DB2 Version 6 tables and indexes for Catalog Indirection for the BMC Software ALTER for DB2, CHANGE MANAGER for DB2, and CATALOG MANAGER for DB2 products
- the integration of the functionality of the BMC Software CM/PILOT® for DB2 product into CHANGE MANAGER
- the integration of the functionality of the BMC Software PATROL DB-Alter™ for DB2 product into ALTER
- the integration of the functionality of the BMC Software PATROL DB-Change Manager™ for DB2 product into CHANGE MANAGER
- for sites that use Single Point Entry for remote access to other non-TSO/ISPF environments, the addition of the input variable BASE SSID to the BMCDB2PR panel for DB2 Version 4 and later for ALTER, CHANGE MANAGER, and DASD MANAGER PLUS
- the ability to install the BMC Software UTILITY MANAGER for DB2 product from the Install System Product Selection panel
- the ability to use the BMC Software COPY PLUS product to update the DASD MANAGER PLUS statistics tables
- the ability to specify the name of the foreground started procedure by setting the FOREGROUND.STARTEDPROC parameter in the INI#ACV member in the *HLQ*.CNTL data set
- the ability to limit each user to open only the spool output that is owned by the user by using the JSI.SPOOLBYOWNER parameter in the INI#ACV member in the *HLQ*.CNTL data set
- the removal of the prompt for the JES release number during the installation of the products
- the addition of the BPOOLIX, BPOOLTS, JDSNBG, and REBLD parameters to the default options module for ALTER and CHANGE MANAGER
- the addition of the LOCATION parameter to the default options module for DASD MANAGER PLUS

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- the modification of the RECVPREF and SYSCPREF parameters in the default options module for ALTER, CHANGE MANAGER, and DASD MANAGER PLUS

- the modification of the IXTYPE parameter in the default options module for ALTER and CHANGE MANAGER

- the modification of the UCDSP and UVDSP parameters in the default options module for CATALOG MANAGER

- the ability to type the codes **I** or **D** on the BMCDB2PR panel to indicate Indirect or Direct catalog access

- the addition of the What's New option to the Install System Main Menu

- the combination of the ALTER and PATROL DB-Alter for DB2 chapters and the combination of the CHANGE MANAGER and PATROL DB-Change Manager for DB2 for OS/390 chapters in this installation guide

This installation guide provides documentation for the following products:

- ALTER for DB2, version 6.1.02
- CATALOG MANAGER for DB2, version 6.1.02
- CHANGE MANAGER for DB2, version 6.1.02
- DASD MANAGER PLUS for DB2, version 6.1.01
- SQL Explorer for DB2, version 3.1.03
- UTILITY MANAGER for DB2, version 1.2

Version 1.6.01—February 29, 2000

This installation guide provides support for the BMC Software Install System. Enhancements for version 1.6.01 of the Install System include

- the ability to connect to another DB2 subsystem from your current SQL Explorer session through the DB2 Distributed Data Facility (DDF)

- a new input variable in the BMCDB2PR panel for sites that use Single Point Entry

- reminders for the $$$$ mask variable on installation panels for sites that use Single Point Entry

- a new interface between SQL Explorer and DASD MANAGER PLUS to migrate or copy statistics from BMCSTATS to the DB2 catalog

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- automatic selection of the CATALOG MANAGER to BMC Utilities interface when UTILITY MANAGER and CATALOG MANAGER are selected to be installed at the same time

- modification of the Catalog Indirection installation panel to include only those products that use this process

This installation guide provides documentation for the following products:

- ALTER for DB2, version 5.4.04
- CATALOG MANAGER for DB2, version 5.4.05
- CHANGE MANAGER for DB2, version 5.4.04
- CM/PILOT for DB2, version 5.4.04
- DASD MANAGER PLUS for DB2, version 5.4.04
- PATROL DB-Alter for DB2, version 3.1.02
- PATROL DB-Change Manager for DB2 for OS/390, version 3.1.02
- SQL Explorer for DB2, version 3.1.01

Version 1.5.30—December 15, 1999

This installation guide provides support for the BMC Software Install System. Enhancements for version 1.5.30 of the Install System include

- the inclusion of $I98*ssid* in the *HLQ*.CNTL library to enable you to remove DB2 structures from a previous installation

- the ability to unload a Japanese language version of the SQL Explorer double-byte character set rules

- the use of the **F4** key or the CKPANELS command to display the percentage of the installation that is complete and the number of panels that remain

- the modification of the TIS and SAT tape labels to make them more readable and useful

This installation guide provides documentation for the following products:

- ALTER for DB2, version 5.4.04
- CATALOG MANAGER for DB2, version 5.4.05
- CHANGE MANAGER for DB2, version 5.4.04
- CM/PILOT for DB2, version 5.4.04
- DASD MANAGER PLUS for DB2, version 5.4.04
- PATROL DB-Alter for DB2, version 3.1.02
- PATROL DB-Change Manager for DB2 for OS/390, version 3.1.02
- SQL Explorer for DB2, version 2.2.07A

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Version 1.5.20—July 30, 1999

This installation guide provides support for the BMC Software Install System. Enhancements for version 1.5.20 of the Install System include

- the modification of $I40INST to automatically copy the BMCMSG CLIST to *HLQ*.CLIST

- the ability to list the subsystem IDs (SSIDs) that are supported by the BMCDB2 CLIST

This installation guide provides documentation for the following products:

- ALTER for DB2, version 5.4.04
- CATALOG MANAGER for DB2, version 5.4.04
- CHANGE MANAGER for DB2, version 5.4.04
- CM/PILOT for DB2, version 5.4.04
- DASD MANAGER PLUS for DB2, version 5.4.04
- PATROL DB-Alter for DB2, version 3.0.02
- PATROL DB-Change Manager for DB2 for OS/390, version 3.0.02
- SQL Explorer for DB2, version 2.2.07A

Version 1.5.10—April 30, 1999

This installation guide provides support for the BMC Software Install System. Enhancements for version 1.5.10 of the Install System include

- the ability to copy an installation user profile
- the integration of the functionality of PATROL DB-Voyager into PATROL DB-Alter and SQL Explorer

The organization of the installation guide, particularly the first four chapters, has changed significantly for this release. Please refer to “About This Book” for information.

This installation guide provides documentation for the following products:

- ALTER for DB2, version 5.4.03
- CATALOG MANAGER for DB2, version 5.4.03
- CHANGE MANAGER for DB2, version 5.4.03
- CM/PILOT for DB2, version 5.4.03
- DASD MANAGER PLUS for DB2, version 5.4.03
- PATROL DB-Alter for DB2, version 3.0.01
- PATROL DB-Change Manager for DB2 for OS/390, version 3.0.01
- SQL Explorer for DB2, version 2.2.07A

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Version 1.4.02—October 30, 1998

This installation guide provides support for the BMC Software Install System and documentation for the following products:

- ALTER for DB2, version 5.4.02
- CATALOG MANAGER for DB2, version 5.4.02
- CHANGE MANAGER for DB2, version 5.4.02
- CM/PILOT for DB2, version 5.4.02
- DASD MANAGER PLUS for DB2, version 5.4.02
- PATROL DB-Alter for DB2, version 2.2.08
- PATROL DB-Change Manager for DB2 for MVS, version 2.2.08
- PATROL DB-Voyager for DB2, version 2.2.08
- SQL Explorer for DB2, version 2.2.07

Version 1.4.01—July 31, 1998

This installation guide provides support for the BMC Software Install System. This installation guide provides documentation for the following products:

- ALTER for DB2, version 5.4.01
- CATALOG MANAGER for DB2, version 5.4.01
- CHANGE MANAGER for DB2, version 5.4.01
- CM/PILOT for DB2, version 5.4.01
- DASD MANAGER PLUS for DB2, version 5.4.01
- PATROL DB-Alter for DB2, version 2.2.07
- PATROL DB-Change Manager for DB2 for MVS, version 2.2.07
- PATROL DB-Voyager for DB2, version 2.2.07
- SQL Explorer for DB2, version 2.2.07

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Chapter 1 Preparing for Installation

This chapter presents the following topics:

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Administrative Products Tapes 1-2
TIS Tape 1-3
SAT Tape 1-3
Installation Requirements 1-3
Authorization to Run the Installation Batch Jobs 1-4
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Overview

This chapter describes the Administrative Products for DB2 distribution tapes and the installation requirements for the products on the tapes. You install BMC Software products on MVS by using an Interactive System Productivity Facility (ISPF) application called the Install System. This chapter provides an overview of the Install System, and describes the types of installations that you can perform using this application.

For information about installing the products on the Administrative Products for DB2 CD, see Chapter 9, “Installing the Client for ALTER and CHANGE MANAGER.”

Distribution Methods

BMC Software distributes products in the following ways:

- on hard media, such as a tape or CD
- electronically, either by file transfer protocol (FTP) or from the BMC Software Web site (**http://www.bmc.com**)

The following sections describe the contents of the distribution tape. If you request electronic distribution, the distribution package is an Electronic Software Distribution (ESD) image. The image compresses the product data sets into one or more sequential data sets. Installing from an ESD image is slightly different than installing from a tape. For more information about installing from an ESD image, see “Processing an ESD Image” on page 2-3.

Administrative Products Tapes

The Administrative Products are distributed on two tapes with the volume prefixes TIS (Tools Install System) and SAT (Second Administrative Tape). The products on the tapes are installed by the Install System.

Note: New to the TIS and SAT tapes is the marketing solution called Administrative Assistant for DB2. When you choose Administrative Assistant for DB2 on the Product Selection Menu, the ALTER for DB2 and CATALOG MANAGER for DB2 products are automatically installed.

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TIS Tape

The TIS tape supports DB2 Version 6.1. The TIS tape contains the following products:

- ALTER for DB2
- CATALOG MANAGER for DB2
- CHANGE MANAGER for DB2
- DASD MANAGER PLUS for DB2
- UTILITY MANAGER for DB2

SAT Tape

The SAT tape supports DB2 Versions 4.1 and 5.1. The SAT tape contains the following products:

- ALTER for DB2
- CATALOG MANAGER for DB2
- CHANGE MANAGER for DB2
- DASD MANAGER PLUS for DB2
- UTILITY MANAGER for DB2

Installation Requirements

The requirements for using the tape set for the BMC Software Administrative Products are as follows:

- IBM® DATABASE 2 version 4.1 or later
- TSO/E version 1.4 or later
- ISPF/PDF version 3.1 or later
- DB2 authorization of SYSADM to execute the generated jobs
- product LOAD libraries must be APF authorized
- *(CATALOG MANAGER)* at least 4 MB for each user who signs on
- *(DASD MANAGER PLUS)* IBM GDDM with the Presentation Graphics Feature (PGF) to use the DASD MANAGER PLUS graphics option
- *(client for ALTER and CHANGE MANAGER)* IBM TCP/IP for OS/390 version 3.1 or later, if TCP/IP is used

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- *(client for ALTER and CHANGE MANAGER)* IBM APPC/MVS for MVS version 4.3 or later, if APPC SNA is used

- IEBCOPY job to copy all load modules to a single APF library (optional)

Note: ALTER and CHANGE MANAGER must be installed in a separate library for each DB2 version. Use the Full installation path to install the product for each DB2 version that you want to use with it.

Authorization to Run the Installation Batch Jobs

When you install BMC Software products for DB2, you must have a DB2 authorization of SYSADM to run the batch jobs that the Install System generates. However, you do not need DB2 authorization to run the Install System or to generate the batch jobs.

Estimated Space Requirements

During the unload process, the Install System allocates various data sets according to the products that you select for installation. The following sections describe the data sets that the Install System allocates for each product on the tape.

HLQ represents the high-level qualifier that you have chosen for the BMC Software Products. To determine your total space requirements, add up the space required for each product that you are installing.

Note: If you are using DB2-defined objects, you must have a previously-defined storage group (STOGROUP). The Install System does not define STOGROUPs.

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ALTER Space Estimates

Table 1-1 and Table 1-2 provide space estimates for ALTER objects and distribution data sets.

Table 1-1 Space Estimates for ALTER Objects

Object (Default)	Primary Quantity (KB)	Secondary Quantity (KB)	Estimated Tracks, 3380	Estimated Tracks, 3390
table space	14560	1160	364	304
index space	2640	1120	66	55

Table 1-2 Space Estimates for ALTER Distribution Data Sets

Distribution Data Set	RECFM	LRECL	Block Size	Estimated Tracks, 3380	Estimated Tracks, 3390
HLQ.CNTL	FB	80	3120	40	35
HLQ.LOAD	U	0	23476	900	900
HLQ.CLIST	VB	255	3120	10	9
HLQ.PLIB	FB	80	3120	180	156
HLQ.MLIB	FB	80	3120	17	15
HLQ.SLIB	FB	80	3120	27	24
HLQ.DBRM	FB	80	3120	80	70
HLQ.TLIB	FB	80	3120	6	6
HLQ.MSGS	FB	80	3120	210	182
HLQ.SCRIPT	VB	255	6124	10	9
HLQ.MSGTEXT	VB	255	27998	2	1

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CATALOG MANAGER Space Estimates

Table 1-3 and Table 1-4 provide space estimates for CATALOG MANAGER objects and distribution data sets.

Table 1-3 Space Estimates for CATALOG MANAGER Objects

Object (Default)	Primary Quantity (KB)	Secondary Quantity (KB)	Estimated Tracks, 3380	Estimated Tracks, 3390
table space	8000	2000	200	167
index space	40	40	1	1

Note: Space estimates for the UTILITY MANAGER for DB2 product are included in Table 1-3, since the UTILITY MANAGER objects are installed with CATALOG MANAGER. For information about UTILITY MANAGER, refer to the *UTILITY MANAGER for DB2 Getting Started* book.

Table 1-4 Space Estimates for CATALOG MANAGER Distribution Data Sets

Distribution Data Set	RECFM	LRECL	Block Size	Estimated Tracks, 3380	Estimated Tracks, 3390
HLQ.CNTL	FB	80	3120	18	15
HLQ.LOAD	U	0	23476	730	730
HLQ.CLIST	VB	255	3120	21	18
HLQ.PLIB	FB	80	3120	300	260
HLQ.MLIB	FB	80	3120	9	7
HLQ.SLIB	FB	80	3120	43	37
HLQ.DBRM	FB	80	3120	56	48
HLQ.TLIB	FB	80	3120	9	7
HLQ.MSGS	FB	80	3120	210	182

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CHANGE MANAGER Space Estimates

Table 1-5 and Table 1-6 provide space estimates for CHANGE MANAGER objects and distribution data sets.

Table 1-5 Space Estimates for CHANGE MANAGER Objects

Object (Default)	Primary Quantity (KB)	Secondary Quantity (KB)	Estimated Tracks, 3380	Estimated Tracks, 3390
table space	28000	4480	700	584
index space	6480	2760	162	135

Note: Space estimates for the CM/PILOT component of CHANGE MANAGER are included in Table 1-5.

Table 1-6 Space Estimates for CHANGE MANAGER Distribution Data Sets

Distribution Data Set	RECFM	LRECL	Block Size	Estimated Tracks, 3380	Estimated Tracks, 3390
HLQ.CNTL	FB	80	3120	40	35
HLQ.LOAD	U	0	23476	1050	1050
HLQ.CLIST	VB	255	3120	10	9
HLQ.PLIB	FB	80	3120	305	265
HLQ.SLIB	FB	80	3120	27	24
HLQ.MLIB	FB	80	3120	17	15
HLQ.DBRM	FB	80	3120	105	91
HLQ.TLIB	FB	80	3120	5	5
HLQ.MSGS	FB	80	3120	210	182
HLQ.SCRIPT	VB	255	6124	10	9
HLQ.MSGTEXT	VB	255	27998	2	1

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DASD MANAGER PLUS Space Estimates

Table 1-7 and Table 1-8 provide space estimates for DASD MANAGER PLUS objects and distribution data sets.

Table 1-7 Space Estimates for DASD MANAGER PLUS Objects

Object (Default)	Primary Quantity (KB)	Secondary Quantity (KB)	Estimated Tracks, 3380	Estimated Tracks, 3390
table space	51840	15840	1296	1080
index space	18000	9000	450	375

Table 1-8 Space Estimates for DASD MANAGER PLUS Distribution Data Sets

Distribution Data Set	RECFM	LRECL	Block Size	Estimated Tracks, 3380	Estimated Tracks, 3390
HLQ.CNTL	FB	80	3120	20	18
HLQ.LOAD	U	0	23476	730	730
HLQ.CLIST	VB	255	3120	75	65
HLQ.PLIB	FB	80	3120	100	87
HLQ.MLIB	FB	80	3120	9	8
HLQ.SLIB	FB	80	3120	27	24
HLQ.DBRM	FB	80	3120	45	39
HLQ.TLIB	FB	80	3120	3	3
HLQ.MSGS	FB	80	3120	250	217
HLQ.QMFQRY	FB	79	3160	3	3
HLQ.QMFPROC	FB	79	3160	3	3
HLQ.QMFFORM	V	85	89	15	15

Note: The *HLQ*.QMFQRY, *HLQ*.QMFPROC, and *HLQ*.QMFFORM data sets can be edited in the JCL from the $I05UNLD job.

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Understanding the Install System

The BMC Software Install System is an ISPF application that helps you generate a set of batch jobs in job control language (JCL). You use the installation batch jobs to unload and install products from a distribution tape.

The Install System guides you through the installation process, allowing you to accept or change defaults along the way. You can readily access Help from each panel by pressing **F1**.

You can install multiple BMC Software products on one DB2 system at a time. You can request different product installation paths as you go through the installation panels. For example, you can request a Full installation of one product and a Maintenance installation of another.

Merging Data Sets from Multiple Tapes

You can install products from various BMC Software tapes (such as SIS, UIS, TIS, DIS, and EDP) during a single Install System session. You accomplish this by using the COPY REPLACE option in the JCL that you use to unload the tape.

When you use a merged data set with the Install System, the installation panels list all of the tape volume serial numbers (VOLSERs) and products that are available in the merged data set. For more information about merging distribution tapes, see “Unloading the Install System” on page 2-6.

Understanding Checkpoints

The amount of time that is required to install BMC Software products depends on several factors, including the number of products that you install, the installation path that you choose for each product, and the complexity of each product. By taking checkpoints at predetermined points, the Install System enables you to interrupt the installation at any time.

When you resume the installation process, the Install System displays a list of the checkpoints that were taken before the interruption. The Install System also saves the options that you specified before the interruption to an ISPF profile. (For more information about the ISPF profile data set, see “Installation User Profile” on page 1-19.) If the Install System is unable to perform the save, no checkpoints will exist. You can return to any checkpoint or begin the installation again, which removes all checkpoints that were taken in the previous session.

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Installation Modes

The Install System offers two installation modes for most products:

- *Quick* installation limits the number of panels that are shown for most products to the common installation panels, and the synonym and default processing options (DOPTs) panels. These panels use the default values that BMC Software provides. The *Quick* option does not allow you to migrate from an earlier version of a product.

- *Custom* installation displays all of the option panels for each product in addition to the common installation panels. This option allows you the most flexibility in setting up the components of the products, from file and database names to file sizes and product-execution parameters.

Note: The *Quick* option is not available for all products. Refer to the appropriate product chapter for information about the installation options that are available for a specific product.

International Language Support

The Install System automatically invokes international language support if the terminal type is 32*xx*KN. (The terminal type is set from the ISPF main menu.) For this terminal type, the Install System also displays the installation panels in uppercase letters.

Installation Paths

The installation path that you select depends on whether you are installing a product for the first time or a new version of an existing product. To help you choose an installation path for each product that you plan to install, review the information in the following sections.

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Determining Product Status

To determine the status of each product that you plan to install, review the requirements that are described in the product-specific chapters of this book and answer the following questions:

- Are you installing the product for the first time?
- Are you installing a new version, release, or maintenance level for a product that is currently installed on your system?
- Are you planning to run this product version concurrently with previous versions or releases?

For products with DB2-specific requirements, answer the following questions:

- Are you planning to use existing BMC Software product tables (created during a previous installation)?
- Are you propagating the product across multiple DB2 subsystems?
- Are you planning to share product libraries between DB2 subsystems?
- Are you planning to install the DB2 products in a data sharing environment (Sysplex)? (Consider a data sharing environment as one DB2 subsystem, since only one catalog exists.)

  Note: To enable access to all of the data sharing members, you must edit the BMCDB2 CLIST. Refer to “Performing the Post-Installation Tasks for Administrative Products” on page 4-3.

After you determine the product status (new or existing), use Table 1-10 on page 13 to help you select an installation path.

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Determining Version, Release, and Maintenance Levels

You must determine whether the distribution tape contains a new version, a new release, or maintenance for each product that you plan to install. The format of the version or release number on the tape label is as follows:

date V.R.MM

The variables shown in the format are as follows:

- *date* represents the product date in the form *mm-dd-yyyy*
- *V* represents the version number
- *R* represents the release number
- *MM* represents the maintenance level

Determine the version, release, and maintenance levels of your currently installed products, and compare that information with the levels on the distribution tape's external label. Table 1-9 shows examples of changes in product status. You can quickly determine whether the distribution tape contains a new version, a new release, or maintenance.

Table 1-9 Changes in Product Status

Product Status	*VRMM*	
new version	installed level	3.2.03
	distribution tape	**4.**0.01
new release	installed level	3.2.03
	distribution tape	3.**3.**00
maintenance level	installed level	3.2.03
	distribution tape	3.2.**04**

Note: Some new versions and releases contain data structure changes for the BMC Software databases, and thus require a Full Installation.

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Determining Installation Paths

Use Table 1-10 to determine the best installation path for the products that you plan to install.

Table 1-10 Selecting an Installation Path

Product Description	Condition or Requirement	Installation Path	Reference
Never installed	You are installing a BMC Software product for the first time (initial installation).	Full	See “Full Installation” on page 1-14.
	You completed the initial installation, and now want to install the product on other DB2 subsystems. You want to share the product libraries that were created during the initial installation.	subsystem ID (SSID) or Multiple SSID	See “SSID Installation” on page 1-15. For Multiple SSID installations, see “Multiple SSID Installation” on page 1-17.
	You completed the initial installation and now want to install the product on other DB2 subsystems. However, you do not want to share the product libraries that were created during the initial installation.	Full	See “Full Installation” on page 1-14.
Previously installed	You are installing a new version or new release of a BMC Software product for the first time (initial installation).	Full	See “Full Installation” on page 1-14.
	You are installing maintenance updates and want to overlay your existing installation.	Maintenance	See “Maintenance Installation” on page 1-14.
	You are installing maintenance updates, but with the following conditions: • You do not want to overlay the existing installation. • You cannot share the product libraries that were created during the initial installation with the maintenance update.	Full	See “Full Installation” on page 1-14.
	You completed the initial installation and now want to install the product on other DB2 subsystems. You want to share the product libraries that were created during the initial installation of the product.	SSID or Multiple SSID	See “SSID Installation” on page 1-15. For Multiple SSID installations, see “Multiple SSID Installation” on page 1-17.
	You completed the initial installation and now want to install the product on other DB2 subsystems. However, you do not want to share the product libraries that were created during the initial installation.	Full	See “Full Installation” on page 1-14.
	You completed the Full, Maintenance, or SSID installation and now want to install catalog indirection.	Indirection	See “Using Catalog Indirection” on page 3-17.
	You have ALTER installed and you want to upgrade to CHANGE MANAGER at the same or higher maintenance level.	Upgrade	See “Migrating Data From ALTER to CHANGE MANAGER” on page 3-28.

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Full Installation

Use the Full installation path to install one or more of the BMC Software products on a single subsystem. All products allow you to choose a Full installation path. This installation path has the following characteristics:

- creates new product libraries and DB2 objects
- allows an interface with other BMC Software products
- allows data migration from a previous release (when you specify the Custom installation mode)
- allows you to retain BMC Software security authorization from a previous release
- allows use of your own VSAM data sets (when supported by the selected product and when you specify the Custom installation mode)

Note: ALTER and CHANGE MANAGER are the only products that must have separate libraries for each DB2 version on which they are installed.

Maintenance Installation

Use the Maintenance installation path to install a maintenance update of BMC Software products. To use the Maintenance installation path, you must have an installed version of the product.

Warning! The Maintenance installation path can overlay existing DB2 plans and packages. If you do not change the DB2 plan name, you can lose access to your currently installed products. To avoid this problem, specify a new DB2 plan name for the Maintenance installation.

This installation path has the following characteristics:

- optionally creates new product libraries
- allows data migration from a previous release
- allows you to retain BMC Software security authorization from a previous release

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Use the Maintenance installation path when the maintenance level for a product changes (for example, from version 3.3.*00* to version 3.3.*01*).

Note: The Maintenance installation does not provide DB2 object creation for products that require this feature. You must use the Full installation path to create DB2 objects. If the DB2 structures are changed, you must perform a Full installation to migrate your data from a previous release.

The Maintenance installation consists of the following paths:

- initial Maintenance installation
- subsequent Maintenance installation, which must share product libraries

Initial Maintenance Installation

Use the initial Maintenance installation path to apply a maintenance update for the first time. Select this option to unload the distribution tape, create a new set of product libraries or overlay existing libraries, generate new default options, and bind plans and packages when applicable.

Subsequent Maintenance Installation

Use the subsequent Maintenance installation path to apply maintenance to other installation sites that share the product libraries that were created during the initial maintenance application. If the subsequent installation sites do not share product libraries, you must use the initial Maintenance installation path.

A subsequent Maintenance installation does not unload the distribution tape, but it does create new default options files. When required by BMC Software products, this type of maintenance installation also binds plans and packages.

Note: Edit your output JCL data set name in the User Options panel before you perform a subsequent Maintenance installation.

SSID Installation

The SSID installation path is available for installation of BMC Software products that require you to create a unique set of DB2 objects for each DB2 subsystem. This installation path has the following characteristics:

- uses product libraries that are created during the full installation
- allows creation of new DB2 objects

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- allows an interface with other BMC Software products
- allows use of your own VSAM data sets (when supported by the selected product and when you specify the Custom installation mode)
- allows data migration from a previous release (when you specify the Custom installation mode)

If you plan to install products on several subsystems that have similar characteristics, you can use the Multiple SSID installation path. For more information see “Multiple SSID Installation” on page 1-17.

Considerations

Since the Install System saves the parameter values that you provide in the first installation, the SSID installation path makes it easier and faster to generate the installation batch jobs. You change only those parameters that are different on each DB2 subsystem.

The Install System generates installation batch jobs for the specified subsystem, but it does not unload data sets from the distribution tape. Instead, the Install System uses the data sets that were unloaded during the Full installation to install the software on the specified DB2 subsystem.

Consider the following requirements before you choose the SSID installation path. For a subsequent installation on a different DB2 subsystem that does not meet these requirements, use the Full installation path again.

- You can use the SSID installation path only after you complete a Full installation of the selected product.
- The SSID installation path applies only to those products that can share BMC Software product libraries.
- The DB2 subsystem that you choose during an SSID installation must have the same version of DB2 as the Full installation of the selected product.
- Edit your output JCL data set name in the User Options panel before you perform a subsequent SSID installation.

Note: For ALTER and CHANGE MANAGER, the SSID installation must be the same version of DB2 as the Full installation. Each of these products must also have separate product libraries for each version of DB2.

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Product Restrictions

Refer to the product-specific chapters for detailed information about using the SSID installation path for a particular product. The following products do not support the SSID installation path:

- ACTIVITY MONITOR for DB2
- APPTUNE™ for DB2
- OPERTUNE® for MQ
- OPERTUNE® for DB2
- PACLOG™ for DB2
- COORDINATED RECOVERY MANAGER (CRM)
- EXTENDED BUFFER MANAGER (XBM™) family of products
- Cross-System Image Manager (XIM™)

Multiple SSID Installation

The Multiple SSID installation path provides a way for you to use an initial product installation as a model for installations on other DB2 subsystems. To enable the Multiple SSID installation path, you must complete the following tasks:

1. Select either the Full installation path or the SSID installation path.

   - Use the Full installation path to install the selected products on a single DB2 subsystem. (See “Full Installation” on page 1-14.)

   - Use the SSID installation path to install the selected products on another DB2 subsystem. (See “SSID Installation” on page 1-15.)

2. At the end of the Full or SSID installation, select option 3 in the JCL Generation Options panel. This option generates installation batch jobs for the specified DB2 subsystem, and builds a multiple SSID JCL model for any additional subsystems.

When you complete these tasks and return to the Install System Main Menu, the Multiple SSID option is displayed as menu option 5.

Considerations

The SSID installation process duplicates the installation of the selected products for each additional DB2 subsystem. This duplication involves assembling default options, creating tables and synonyms, and binding plans on the additional DB2 subsystems. All of the considerations that apply to the SSID installation path also apply to the Multiple SSID installation path. (See “Considerations” on page 1-16.)

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In addition, subsystem characteristics must be similar for all of the DB2 subsystems in the multiple SSID model. Installation parameters for subsequent subsystems cannot differ significantly from the initial installation process. However, the following installation information can differ between subsystems:

- job card information
- library name for the generated batch jobs
- DB2 LOAD and EXIT library names
- authorized program facility (APF) library name
- DOPTs names (only for BMC Software administrative products)
- STOGROUP names
- VSAM catalog (VCAT) names (including VCAT volume and DASD type)

Name Propagation

You can easily propagate the names for multiple subsystem installations if the name or part of the name differs only by the DB2 SSID. To propagate a name that includes the SSID, substitute the special identifier *$$$$* for that part of the name that represents the SSID during the initial Full or SSID installation. During the subsequent Multiple SSID installation process, the Install System replaces the special identifier with the correct SSID when it generates the installation batch jobs.

Note: If the DB2 subsystems differ in characteristics that are outside the scope of the Multiple SSID installation process, you must perform a standard SSID installation for each subsystem, using a new installation user profile.

Installation Data Sets

The Install System creates the following data sets prior to creating the data sets for the BMC Software products:

- *HLQ*.INSTALL library
- *HLQ*.INSTALL.LOAD load library
- User-named output JCL data set

Note: You can create as many user-named output JCL data sets as you want by rerunning the Install System.

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Installation User Profile

The Install System saves the installation options in a user profile. The member name of the user profile is *xxxx*PROF, where *xxxx* is the profile ID. The default profile ID is DCI, so the default member name is DCIPROF. The Install System saves the installation profile in the following locations:

- the ISPF profile data set (ISPPROF) that is associated with your user ID
- the output JCL data set that you specify in the User Options panel to contain the installation batch jobs
- the *HLQ*.INSTALL library that you create when you unload the Install System from the tape

Searching for the Installation Profile

The Install System searches the following data sets, in the order shown, for the *xxxx*PROF member:

1. the user-named output JCL data set
2. the *HLQ*.INSTALL data set
3. the ISPF profile data set

If the Install System finds the member in one of the first two data sets, it copies the member to your ISPF profile data set. ISPF can then use the member to retrieve and store the installation parameters.

Note: If the Install System cannot find the profile member, it creates a new *xxxx*PROF member. At the end of the installation session, the Install System copies this member from the ISPF profile data set to the user-named output JCL and *HLQ*.INSTALL data sets. If your TSO session terminates abnormally, modifications to your profile are not saved.

Reusing the User Profile

You can reuse an installation user profile by starting the Install System with an existing *HLQ*.INSTALL or output JCL data set that contains a *xxxx*PROF member. Reusing the profile gives you access to the installation options that you specified during the previous installation session.

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An installation option allows you to browse existing input data sets for an appropriate installation profile and copy the profile to the current installation data set. This option is useful when you are unsure of the profile name or contents.

If you reuse a profile from a previous installation session, you must review the installation options carefully. Verify that the values for the options are still valid for the current installation. Change any values in order to reflect the new release. (For example, a database name or plan name might change from one release to the next.)

Warning! Failure to change the required parameters for the new installation can cause severe errors when you submit the installation JCL. For example, if you do not change a DB2 plan name from a previously specified value, you can overwrite a plan that your current installation uses.

Installation Default Options

After the Install System generates the installation batch jobs, the user-named output JCL data set contains a member that establishes values for default processing options (DOPTs). The member name has the format $*xnn*DOPT, where the variable *xnn* is a three-character ID that is based on the installation path that you choose for the product.

Some of the BMC Software products use a text options file, while others use an assembled options module. The $*xnn*DOPT member contains either logic to copy the option file to the CNTL data set or an assembly language program with an options macro call. You can tailor the processing of the product by editing the default values in the $*xnn*DOPT member.

When the $*xnn*DOPT job is submitted, the Install System acts as follows:

- If the $*xnn*DOPT member is a text options file, the Install System copies it to the CNTL data set.
- If the $*xnn*DOPT member is an assembled options module, the Install System generates it into the APF-authorized library that you specify during the installation process.

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If you modify any of the values in member $*xnn*DOPT after installation, you must rerun the $*xnn*DOPT job for these changes to occur. You can also modify the options for a specific product by editing and running the stand-alone options job for that product in the product library. The name of the options job for each product varies depending on the type of product that you are installing. For more information about DOPTs for a specific product, see the appropriate product chapter in this book.

Rules for Running Multiple Product Releases in a Single Subsystem

You may need to perform acceptance testing on a new release before you can upgrade it to production. To facilitate this requirement, you can run multiple releases of some BMC Software products within a single DB2 subsystem. If you plan to use the Full installation path to install multiple releases of the BMC Software products, follow these rules:

- Use a unique high-level qualifier (HLQ) that is different from the qualifier currently in use. The Install System creates a new set of BMC Software product libraries to support the new release.
- Do not copy the load modules to the APF library that is currently in use.
- Use the Custom installation mode.
- Use a DB2-synonym qualifier for the product that is different from the qualifier currently in use.
- Use naming conventions that are different from the conventions currently in use for plans and collection IDs.
- If you do not want to share the existing DB2 objects with the new release of the products, use DBNAME and CREATOR names that are different from other BMC Software objects.

The Install System generates a new ISPF interface to access the newly-installed set of products. You must continue to use the old ISPF interface to access the older set of products.

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Product Naming Conventions

The Administrative Products use a new set of DB2 structures for each new release. Most of the BMC Software Utility products and Backup and Recovery products use the same set of DB2 structures from one release to the next. You are prompted during the installation for the names of the existing DB2 structures.

When you install new releases over existing releases, a consistent naming convention is important.

Some sites use their own naming conventions during the installation. Because these naming conventions may not incorporate the version and release level of the BMC Software products, the object names in the new release may become identical to those in the old release.

You can install a new release and then copy the data from the old release to the new release, using identical DB2 object names (for example, database and table names). See “Migrating DB2 Objects Between Releases” on page 2-26 for detailed steps.

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Chapter 2 Using the Install System

This chapter presents the following topics:

Getting Started 2-2
- Processing an ESD Image 2-3
- Unloading the Install System 2-6
- Starting the Install System 2-10

Running the Install System 2-14
- Main Menu 2-14
- Keys and Commands 2-14
- Data Set Names 2-15
- Symbolic Variables 2-15
- Considerations for SAS/C 2-17
- Specifying User Options 2-19
- Generating Installation JCL 2-22
- Migrating DB2 Objects Between Releases 2-26

Cancelling the Installation 2-27
- Reverting to Conditions Prior to a Tape Installation 2-27
- Reverting to the Prior Version of an Individual Product 2-28

Where to Go From Here 2-28

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Getting Started

Table 2-1 lists the tasks that you must perform to install BMC Software products. Complete the tasks in the order that they are presented, using the References column to direct you to the location of the task instructions.

Table 2-1 Getting Started with the Install System

Task	References
Perform preinstallation tasks. These tasks include • gathering the information that you need to configure the products that you choose to install • backing up your current system • ensuring that everything on your system is ready for the new products	• See Chapter 3, “Performing Additional Installation Tasks.” • See the product chapters in this book. • See *Install System for MVS-Related Products: Helpful Tips* (accessible from the Web at **http://www.bmc.com/support.html**).
If you receive your software electronically, you must process the Electronic Software Distribution (ESD) image.	See “Processing an ESD Image” on page 2-3.
If you receive your software on a distribution tape, you must unload the Install System application from that tape.	See “Unloading the Install System” on page 2-6.
Run the Install System CLIST to start the Install System.	See “Starting the Install System” on page 2-10.
Specify your user options for the Install System.	See “Specifying User Options” on page 2-19.
Use the Install System to specify environment and product options and to generate installation batch jobs for each product that you install.	See “Generating Installation JCL” on page 2-22.
Run the installation batch jobs to install the products and create any DB2 objects that are required for the products.	See the product chapters in this book.

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Processing an ESD Image

Summary: To install the data sets from an Electronic Software Distribution (ESD) image, you must copy the image to the mainframe and expand the data sets. Use the following procedure to accomplish this task. This procedure does not describe how to acquire an ESD image from BMC Software. For information about receiving your software electronically, contact your BMC Software sales representative.

Before You Begin

At the BMC software download site, review the documents README.HTML and ESD_MODULES.pdf to identify the files that you need. If you are installing more than one product, modules and data sets that are common among products need only be transferred once.

Note: Many products have only one required image while others have several.

Before you can process the ESD image on your mainframe, you must allocate a sequential data set on your direct access storage device (DASD), as shown in Table 2-2.

Table 2-2 DASD Allocations for ESD Images

DASD Type	Primary Allocation	Secondary Allocation
3380	27 cylinders	2 cylinders
3390	24 cylinders	2 cylinders

The data set should have the following attributes:

- a fixed, binary record format (`RECFM=FB`)
- a logical record length of 80 columns (`LRECL=80`)
- a block size of 3120 bytes (`BLKSIZE=3120`)

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To Process the ESD Image

Step 1 Use your site's file transfer protocol (FTP) procedure to transfer the ESD image to the data set that was just allocated on the mainframe, using a *binary* transfer scheme. You can also use an internet browser to copy files to your site, then upload the files to the mainframe.

If you are not familiar with FTP procedures, or if you need assistance transferring the file to the mainframe, contact your site's MVS system programmer or technical support.

Step 2 Edit the mainframe data set as follows:

2.A Edit the job card to comply with your site's requirements, using all uppercase letters.

2.B To specify a high-level qualifier (HLQ) prefix for the expanded data set (other than your user ID), remove the comment marker from the `PROFILE PREFIX` statement, and specify a prefix. Only a single-node prefix or high-level qualifier is allowed.

The prefix appends to the HLQ for the expanded data set, and you can specify only one qualifier. The default HLQ prefix is your user ID.

Note: Keep a record of the HLQ for later use. During installation, you will identify the HLQ to the Install System.

2.C To specify a unit name for the data sets, replace the value `SYSALLDA` with a valid DASD unit name.

2.D If you need to specify a volume for the uncompressed data sets, add the volume parameter after the unit parameter as in the following statement:

```
EXEC DCI.prdvrm.RECEIVE 'UNIT(SYSALLDA) VOL(volume_ID)';
```

where *prdvrm* indicates the actual product image file release information.

Warning! Do not edit any other part of the job.

Step 3 Submit the job.

Note: If you have difficulty submitting the job, try saving your changes, exit the data set, and submit the job externally.

Step 4 Repeat steps 1 through 3 for each ESD file transferred.

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Where to Go from Here

After the ESD image has been expanded and separated, you are ready to start the Install System. For more information, see “Starting the Install System” on page 2-10.

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Unloading the Install System

Summary: Use the following procedure to unload the Install System from the distribution tape.

Note: This procedure unloads only those files that you use during the installation process. It does not unload any product files from the tape.

Before You Begin

Before you unload the Install System from the distribution tape, you should review the release notes, technical bulletins, and flashes that are included with the product. These notices contain additional information about the products on the tape, including information that may have been added after this book was published.

At times it is necessary to cancel the installation process and revert to the previous level of a product or a product tape set. To ensure that you can revert to conditions prior to this installation, you should back up your current version before you begin the installation process.

- Copy and save your current installation and product libraries. Depending upon the products that you have installed, these libraries may include LOAD, DBRM, PLIB, MLIB, SLIB, TLIB, INSTALL, CLIST, CNTL, JCL, and MSGS.

- When you install, BMC Software recommends that you use unique plan names, table names, repository names, and qualifier names.

To Unload the Install System

Step 1 Create a batch job similar to the one shown in Figure 2-1 on page 2-7, as follows:

1.A Create a job step to unload File 1 into a data set with the low-level qualifier INSTALL (for example, BMC.INSTALL).

1.B Create a job step to unload File 2 into the load library that the Install System will use (for example, BMC.INSTALL.LOAD).

Note: In Figure 2-1 on page 2-7, the variable *XXXYMD* represents the product tape VOLSER. For products that are contained on two tapes, use either tape to unload the Install System.

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Figure 2-1 Unload Job for the Install System

```
//DCIINST  JOB  (ACCOUNT)
//*
//*
//UNLOAD    EXEC PGM=IEBCOPY
//SYSPRINT  DD SYSOUT=*
//SYSUT3    DD UNIT=SYSDA,SPACE=(TRK,(1,1))
//SYSUT4    DD UNIT=SYSDA,SPACE=(TRK,(1,1))
//DCITINST  DD DSN=BMC.INSTALL,DISP=OLD,VOL=SER=xxxymd,
//             UNIT=TAPE,LABEL=(1,SL,EXPDT=98000)
//*
//DCITLOAD  DD DSN=BMC.INSTALL.LOAD,DISP=OLD,VOL=SER=xxxymd,
//             UNIT=AFF=DCITINST,LABEL=(2,SL,EXPDT=98000)
//*
//DCIINST   DD DISP=(,CATLG,DELETE),DSN=your.name.INSTALL,
//             UNIT=SYSDA,SPACE=(CYL,(40,5,700)),
//             DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//*
//DCILOAD   DD DISP=(,CATLG,DELETE),DSN=your.name.INSTALL.LOAD,
//             UNIT=SYSDA,SPACE=(CYL,(5,1,40)),
//             DCB=(RECFM=U,BLKSIZE=23476)
//*
//SYSIN     DD *
  COPY     I=DCITINST,O=DCIINST
  COPY     I=DCITLOAD,O=DCILOAD
```

Step 2 To install products from multiple tapes, edit the unload job to copy multiple INSTALL data sets into a single data set by using the REPLACE option.

For each tape to be merged, you must add the following statements to the unload job:

- an additional DD statement
- an additional SYSIN copy statement

When merging product tapes, always observe the following guidelines:

- If you merge tapes with different versions of the Install System, copy the oldest release first. Then, use the COPY REPLACE option to copy the newer releases into the same data set.

- You cannot merge multiple releases of the same product. (In other words, do not merge two tapes with the same tape code, such as SIS.)

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- Always use the load library from the latest available release of the Install System. The *HLQ*.INSTALL.LOAD data set is not merged.

Note: Determine the latest release of the DB2 Common Install System by reviewing the version release level on the physical tape label. Alphabetic maintenance levels are more recent than numeric maintenance levels. For example, version 1.6.A0 is a later release than version 1.6.90.

Figure 2-2 shows an example of an unload job that merges data sets from two distribution tapes, where *prod_tape* 2 contains the latest available release of the Install System.

Figure 2-2 Unload Job for the Install System, Using Merge

```
//DCIINST  JOB  (ACCOUNT)
//*
//UNLOAD    EXEC PGM=IEBCOPY
//SYSPRINT  DD SYSOUT=*
//SYSUT3    DD UNIT=SYSDA,SPACE=(TRK,(1,1))
//SYSUT4    DD UNIT=SYSDA,SPACE=(TRK,(1,1))
//DCITINST  DD DSN=BMC.earliest.INSTALL,
//             DISP=OLD,VOL=SER=(prod_tape 1),
//             UNIT=TAPE,LABEL=(1,SL,EXPDT=98000)
//DCITINS2  DD DSN=BMC.latest.INSTALL,
//             DISP=OLD,VOL=SER=(prod_tape 2),
//             UNIT=AFF=DCITINST,LABEL=(1,SL,EXPDT=98000)
//*
//DCITLOAD  DD DSN=BMC.INSTALL.LOAD,
//             DISP=OLD,VOL=SER=(prod_tape 2),
//             UNIT=AFF=DCITINST,LABEL=(2,SL,EXPDT=98000)
//*
//DCIINST   DD DSN=your.name.INSTALL,
//             DISP=(,CATLG,DELETE),
//             UNIT=SYSDA,SPACE=(CYL,(40,5,700)),
//             DCB=(RECFM=FB,LRECL=80,BLKSIZE=6160)
//*
//DCILOAD   DD DSN=your.name.INSTALL.LOAD,
//             DISP=(,CATLG,DELETE),
//             UNIT=SYSDA,SPACE=(CYL,(5,1,40)),
//             DCB=(RECFM=U,BLKSIZE=23476)
//*
//SYSIN     DD *
  COPY     I=DCITINST,O=DCIINST
  COPY     I=((DCITINS2,R)),O=DCIINST
  COPY     I=DCITLOAD,O=DCILOAD
```

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Note: Bold lines in Figure 2-2 on page 2-8 indicate differences in the unload job when Merge is selected. It is critical that the install libraries are unloaded in the order that they were originally released. In the example library names, BMC.*earliest*.INSTALL represents an older release of the install library and BMC.*latest*.INSTALL represents the most recent release of the install library.

Step 3 Run the job to unload the installation libraries into File 1 and File 2.

Step 4 If you list the BMC Software products in the link list, check the concatenation of the data set with the most recent release of the SAS/C library.

Ensure that the most current library is concatenated before any data sets that contain older SAS/C releases. This process is especially important if you use products from other vendors who also distribute the SAS/C transient library.

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Starting the Install System

Summary: After you unload File 1 and File 2 from the distribution tape, you must run a CLIST to access the Install System. You can run the CLIST from the TSO Commands Utility panel. This panel is displayed if you choose the Command option from the ISPF/PDF Primary Option menu. You can also run the CLIST from any ISPF command line.

Note: In this procedure, the variable *HLQ* is the high-level qualifier that you assigned to the INSTALL data set when you unloaded the tape.

Before You Begin

Before you start the Install System, complete the following tasks:

- Unload the Install System as instructed in "Unloading the Install System" on page 2-6.
- Verify that the installer's ISPF profile data set has at least one free directory block. If you do not have at least one free directory block, the `PROFILE NOT LOADED` message or an `ISPF STOW` error message is displayed, and the Install System dialog panel terminates.
- Run the IBM RUNSTATS utility on the DB2 catalog. BMC Software Administrative Products use Structured Query Language (SQL) to access the DB2 catalog. If you run the RUNSTATS utility, up-to-date statistics are available to the DB2 Optimizer when it determines access paths that could improve performance.
- The Install System uses the ZUSER symbolic to create temporary data sets for the installation process and to identify the installer in the comments of the installation JCL. If you prefer to use ZPREFIX instead of ZUSER, you must edit member *HLQ*.INSTALL (DCIC0000). In member DCIC0000, find the keyword UNCOMMENT and follow the instructions that are provided in the member.
- If you are using the Full installation path for a product, specify a synonym qualifier to own all of the product's synonyms. Each BMC Software product that accesses DB2 tables uses its own set of synonym names to access its own DB2 tables and the DB2 catalog tables. These synonyms are created by the Install System. The Install System online dialog panel prompts you to specify synonym qualifiers.

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When the BMC Software products run, the owner of the synonyms is obtained from the QUALIFIER value of the processing plan. When the owner is known, the object to which the synonym applies is also known.

When you specify a synonym qualifier

- Select NEW status if the qualifier is currently not in use by any other BMC Software product in the target DB2 subsystem.
- Select USED/REUSE status if the BMC Software product is currently using the qualifier, but this usage can be replaced.

For example, if you previously installed a BMC Software product with a qualifier of ALU33D and want to install a new release of the same product using the same qualifier ALU33D, select USED/REUSE. Synonyms referencing the old environment are dropped so that synonyms referencing the new environment can be created.

Warning! Reusing existing qualifiers invalidates processing of the product release that is already installed.

To Start the Install System

Step 1 In the TSO Commands Utility panel, type the following command:

EX '*HLQ*.INSTALL(DCIINSTL)' '*HLQ*'

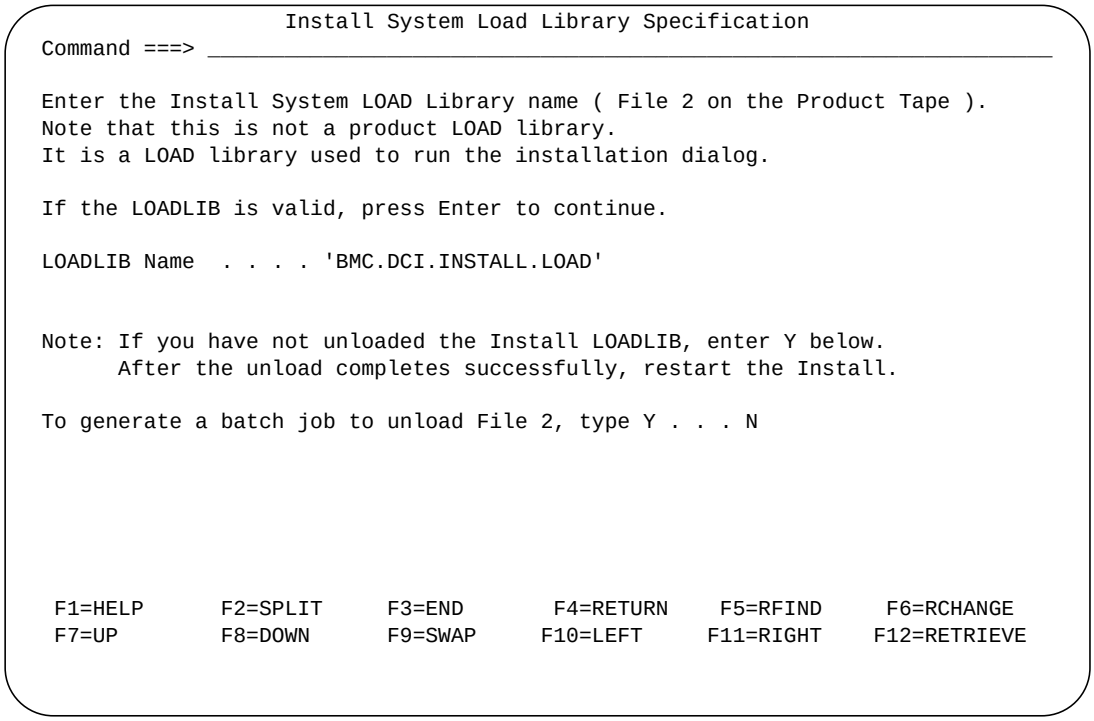
For example, the following command uses the high-level qualifier BMC.DCI:

EX 'BMC.DCI.INSTALL(DCIINSTL)' 'BMC.DCI'

The Install System displays the Load Library Specification panel (see Figure 2-3 on page 2-12).

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Figure 2-3 Install System—Load Library Specification


Install System Load Library Specification
Command ===>
Enter the Install System LOAD Library name (File 2 on the Product Tape).
Note that this is not a product LOAD library.
It is a LOAD library used to run the installation dialog.
If the LOADLIB is valid, press Enter to continue.
LOADLIB Name . . . . 'BMC.DCI.INSTALL.LOAD'
Note: If you have not unloaded the Install LOADLIB, enter Y below.
After the unload completes successfully, restart the Install.
To generate a batch job to unload File 2, type Y . . . N
F1=HELP F2=SPLIT F3=END F4=RETURN F5=RFIND F6=RCHANGE
F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE

Step 2 In the LOADLIB Name field, type the name of the Install System load library (File 2 of the distribution tape).

If you unloaded File 2 as instructed on page 2-6, this is the name of the load library as specified in the job that you used to unload the Install System from the distribution tape.

Step 3 If you followed the unload procedure on page 2-6 (or if you have already completed Steps 3.A through 3.E) specify **N** in the next field, and press **Enter**.

If you did not unload File 2 as instructed on page 2-6, complete the following steps:

3.A Type **Y** in the selection field, and press **Enter**.

3.B Type the appropriate job card, tape, and load library information in the Unload LOADLIB panel, and press **Enter** to generate the JCL.

3.C Review the JCL member ($$UNLOAD) and edit it as necessary.

3.D Run the job that unloads the load library from the tape.

3.E Return to Step 1 of this procedure and start the Install System again.

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The Install System displays the Main Menu (see Figure 2-4), from which you can set user options for the installation process and generate batch jobs for the product installation.

If the tape set has additional options, they are listed on the Main Menu, also. Refer to Chapter 1, “Preparing for Installation,” for information about the contents of the distribution tape.

Figure 2-4 Install System—Main Menu

```
                    Install System Version 1.7.31 - Main Menu

Welcome to the BMC Install System.

Select an option number then press Enter to continue.

  _ 0.  User Options         Specify User Parameters for Installation.

    1.  Product Install      Specify a Product Installation Path.

    2.  BMC Authorization    Maintain Product Passwords.

    3.  What’s New           Install changes for this release.

    4.  Additional Options   Install Catalog Indirection, ALTER Upgrade,
                             and Demo.


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Command ===> ____________________________________________________________________
 F1=HELP        F2=SPLIT       F3=EXIT        F9=SWAP       F12=CANCEL
```

If a Problem Occurs

The distribution tape VOLSER is recorded in File 1 on the distribution tape. During installation, the Install System displays the VOLSER. Verify that the VOLSER corresponds with the label on the distribution tape. If the VOLSERs differ, you may be invoking the wrong installation CLIST. (See “Unloading the Install System” on page 2-6 for more information.)

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Running the Install System

The Install System guides you through installation procedures and decisions. Use the dialog panels to generate installation batch jobs for the products that you choose to install.

Main Menu

Options on the Main Menu correspond to the list of tasks that you usually perform the first time that you install a BMC Software product. The menu options are as follows:

- User Options
- Product Installation
- BMC Software Authorization

If the tape set has additional options, they are also listed on the Main Menu. Refer to Chapter 1, “Preparing for Installation,” for information about the contents of the distribution tape.

Keys and Commands

The Install System panels provide messages at the bottom to indicate which function keys are active. By default, the active function keys are not displayed. To display the active keys, type the ISPF command PFSHOW on the command line and press **Enter**.

The following commands and function keys are available to help you move through the Install System dialog panels. Commands are entered on the ISPF command line.

- HELP or **F1** displays the Help panel for the current dialog panel.
- END or **F3** saves changes and returns to the Install System Main Menu.
- CKPANELS or **F4** displays the percentage of the installation that is complete and the number of panels that remain.

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- CANCEL or **F12** *saves any changes* and returns to the previous panel.
- **Enter** accepts the defaults or changes and continues to the next panel.

Note: The **F4** key is assigned to the percentage complete function only if you have installed using version 1.5.30 or later of the Install System and you are using a new profile ID.

The following function keys are available to help you move through the Install System Help panels:

- **F3** exits the Help panel and returns to the current dialog panel.
- **F10** or **F12** returns to the previous page of a multiple-page help panel.
- **Enter** or **F11** continues to the next page of a multiple-page help panel.

Data Set Names

The Install System uses ISPF conventions when processing data set names. When you specify a data set name, the Install System determines whether the TSO/E PROFILE NOPREFIX option is in use. If it is in use, the Install System does not append a prefix to the data set name. The maximum length for data set names is 44 characters, including the prefix if one is used.

Symbolic Variables

The Install System frequently uses symbolic variables in data set names, data set prefixes, and job-statement information. A symbolic variable is a variable name with an ampersand (&) prefix. In the Install System, most occurrences of symbolic variables are related to keyword values that you specify in the product options.

While assembling product options, macro processing attempts to resolve all symbolic variables in the listing. Most of the symbolic variables are resolved when JCL is generated from one of the BMC Software products, not during assembly of the default options (DOPTs) module. To prevent errors during DOPTs-module assembly, the Install System doubles the ampersand for all symbolic variables.

The double-character rule also applies to

- single quotation marks within literal values if the literal is enclosed with delimiting single quotation marks
- a period if it immediately follows a variable name

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Table 2-3 illustrates the use of double characters.

Table 2-3 Using Double Characters

Variable	Result
&&	&
"	'
..	.

Examples of Symbolic Variables

The following examples show symbolic-variable specifications in the DOPTs listing and in the user options after DOPTs assembly.

Example 1

DOPTs:

```
&&PREFIX..&&SSID..&&DBNAME..&&TSNAME
```

user options:

```
&PREFIX.&SSID.&DBNAME.&TSNAME
```

Example 2

DOPTs:

```
//&&USERID.&&JOBCHAR JOB(ACCT),''&&PGMR'',
```

user options:

```
//&USERID&JOBCHAR JOB(ACCT),'&PGMR',
```

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Common Assembly Errors for DOPTs

All DOPTs assembly jobs should be completed with a successful return code of zero. If you get assembly errors, compare your DOPTs listing with one that the installation process generated. Some common errors are as follows:

- missing comma delimiter after keyword value

  For each keyword value except the last, a comma delimiter is needed. For example

```
SSID=(DB2P,R)            /*wrong*/
SSID=(DB2P,R),           /*correct*/
```

- missing continuation character in column 72

  For each keyword value except the last, a character such as an asterisk (*) is required in column 72.

- incorrect symbolic-variable substitution

  The macro tries to resolve all symbolic variables. Double the ampersand (&) on all symbolic variables. For example

```
JCLDSN=&PREFIX..&SSID..&DBNAME..&TSNAME,   /*wrong*/
JCLDSN=&&PREFIX..&&SSID..&&DBNAME..&&TSNAME, /*correct*/
```

- missing or unbalanced single quotation marks

  For example

```
JC1='//&&USERID.&&JOBCHAR JOB(ACCT),'&&PGMR',   /*wrong*/
JC1='//&&USERID.&&JOBCHAR
JOB(ACCT),''&&PGMR'',',/*correct*/
```

Considerations for SAS/C

For those products that require SAS/C transient libraries, the Install System optionally unloads version 6.5 of the SAS/C transient library during the unload process.

If you *choose not to* unload the SAS/C library, you must ensure that the SAS/C transient library (version 6.5 or later) exists in the link list.

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If you *choose to* unload the SAS/C transient library, the Install System unloads a copy of the library into one or both of the following locations:

- the load library that is designated for your BMC Software products
- a new or existing file to be concatenated in your JCL as a STEPLIB (EDM™ products only)

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Specifying User Options

Summary: The Install System lets you specify user options for each installation session. The options that you specify determine how the Install System runs and where it stores the installation JCL. The options remain in effect until you change them.

Before You Begin

Before you specify the user options, you must complete the following tasks:

- Unload the Install System, as instructed in “Unloading the Install System” on page 2-6.
- Start the Install System, as instructed in “Starting the Install System” on page 2-10.

To Specify User Options

Step 1 From the Install System Main Menu, type **0** in the selection field and press **Enter**.

Step 2 Select an installation mode by typing **1** for Quick or **2** for Custom.

- *Quick* installation limits the number of panels that are shown for most products to the common installation panels, and the synonym and DOPTs panels. These panels use the default values that BMC Software provides. The *Quick* option does not allow you to migrate from an earlier version of a product.
- *Custom* installation displays all of the option panels for each product in addition to the common installation panels. This option allows you the most flexibility in setting up the components of the products, from file and database names to file sizes and product-execution parameters.

Note: The *Quick* option is not available for all products. Refer to the appropriate product chapters for more information about the installation options that are available for specific products.

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Step 3 Specify an output JCL data set to contain the installation JCL that the Install System generates.

The output JCL data set contains

- all of the jobs that are used to install the selected products
- the ISPF panels and table that correspond to the product CLISTs
- most of the CLISTs that are used to run the selected products (Some products do not require CLISTs in the installation JCL.)

Warning! The default is the *HLQ*.JCL data set. If you enter an existing data set name, the Install System warns you that it will overwrite existing JCL in that data set.

The installer may need to review the user-named output JCL data set periodically to customize a product, remove the installation, or accommodate the request of a BMC Software technical support representative on a support call. You should have one output JCL data set for each type of installation. If you overwrite an output JCL data set, you remove a helpful audit trail.

Step 4 Specify the output JCL VOLSER or Storage Management System (SMS) parameters.

Step 5 Specify a user profile ID for the installation user profile.

The Install System uses the ID that you specify and the suffix *PROF* to form the profile member name. The default value of the profile ID is **DCI**, and the ID can be up to four characters long. The Install System stores the profile in the following locations:

- the output JCL data set that you specified in Step 3
- the ISPF profile data set (ISPPROF) that is associated with your user ID
- the *HLQ*.INSTALL library that you created when you unloaded the Install System from the tape

The installation user profile contains the settings for the installation variables. For more information about how the Install System uses the installation user profile, see “Installation User Profile” on page 1-19.

Warning! If you use an existing profile, you must review the installation parameters carefully. Failure to change the required parameters during the new installation procedure can cause severe errors when you submit the installation JCL. For example, if you do not change a DB2 plan name from a previously specified value, you can overwrite a plan that your current installation uses.

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Step 6 Choose to process a profile from a previous installation, if necessary.

If you are unsure of the profile's name or contents, this option allows you to browse existing input data sets for an appropriate installation profile and copy the profile to the current installation data set.

Step 7 Choose Reset if you want to set the installation parameters for the selected products to the initial BMC Software default values.

The Install System stores the updated values in your installation profile.

Step 8 Type **Y** (yes) or **N** (no) to choose whether the Install System displays a series of panels from which you can review the installation variables.

The Install System displays the review panels before generating the installation JCL. You can change most of the values that are shown by typing over them.

Note: To avoid the possibility of overwriting your production data sets and libraries, BMC Software recommends that you review your installation variables before generating installation JCL.

Step 9 Choose an entry-field delimiter.

If your display terminal supports the extended highlighting feature, you can change the default entry-field delimiter from **NONE** to **USCORE** (underscore) or **REVERSE** (reverse video).

Step 10 Press **Enter** to save your changes and return to the Install System Main Menu.

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Generating Installation JCL

Summary: After you define the user options, you are ready to generate installation batch jobs for the BMC Software products that you choose to install. This procedure helps you navigate through the Install System's panels. For information about a specific product, see the appropriate product chapter.

Before You Begin

Before you use the Install System to generate the installation JCL, complete the following tasks:

- Gather the information that you will need when specifying the product and environment options for the installation. For more information about these options, see the appropriate product chapters. Refer also to Chapter 3, "Performing Additional Installation Tasks" and *Install System for MVS-Related Products: Helpful Tips*.
- Unload the Install System, as instructed in "Unloading the Install System" on page 2-6.
- Start the Install System, as instructed in "Starting the Install System" on page 2-10.
- Specify the user options, as instructed in "Specifying User Options" on page 2-19.

To Generate the Installation JCL

Step 1 From the Install System Main Menu, type **1** in the selection field and press **Enter**.

Step 2 In the Product Selection panel, choose the products that you want to install and the installation path for each product.

The Product Selection panel lists all of the products available in the installation data set that you created when you unloaded the Install System from the distribution tape. For more information about selecting the right installation path, see "Installation Paths" on page 1-10.

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Step 3 Press **Enter** to continue.

The Install System presents a series of panels that let you specify environmental options for the installation and default options for each product you chose in Step 2. Use the information that you gathered before you began this procedure to complete the fields in the panels. For more information about default options, see the appropriate product chapter. To move through the panels, use the keys described in “Keys and Commands” on page 2-14.

Step 4 Review your installation choices.

If you specified the Review Variables user option (see page 2-19), the Install System displays a series of panels that summarizes the values that you specified for the installation parameters. You can change most of the values shown by typing over them.

Step 5 Generate the batch jobs to install the products.

5.A In the JCL Generation Option panel, specify one of the following options:

- Specify **1** to generate installation batch jobs in the data set that you specified in “Specifying User Options” on page 2-19. This option generates all of the batch jobs that will unload the product libraries from tape and install the MVS components.

  Warning! If installation batch jobs already exist in the specified data set, they are overwritten.

- Specify **2** to skip batch-job generation and display the next panel. No installation batch jobs are created.

- Specify **3** to generate installation batch jobs and a template for multiple SSID installations. If you plan to install products on several DB2 subsystems, consider using the Multiple SSID installation path for the additional subsystems. For more information, see “SSID Installation” on page 1-15 and “Multiple SSID Installation” on page 1-17.

5.B Press **Enter** to start processing the batch jobs.

If you chose to generate the batch jobs, the Install System creates the batch job streams that are used for product installation. The job streams contain batch jobs and BMC Software worklists, which are used by some products to create DB2 objects.

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The worklist members are structured in a BMC Software executable format and can contain the following types of statements:

- DB2 Data Definition Language (DDL)
- Data Control Language (DCL)
- Data Manipulation Language (DML)
- DB2 utility parameters

5.C After all of the required jobs are generated, press **Enter** to display the list of generated jobs.

Step 6 Before you submit the jobs, review the product documentation for additional installation requirements.

Some products have specific requirements for submitting the installation batch jobs. Use the following sources to determine the requirements for each product that you are installing:

- the $I00DOC member of the installation batch jobs
- the product chapters in this book
- release notes, flashes, and technical bulletins that are distributed with the products

Step 7 Run the jobs in the order that is shown on the list and as instructed by the product documentation.

Return Codes Greater than 0

Return codes greater than 0 are specific to the install job that is run and the products that are referenced. Refer to the comment block near the beginning of install job $I40INST for information about return codes greater than 0.

You may receive a return code 4 during the bind steps when installing some products on various DB2 versions.

To Remove Old DB2 Structures

The installation procedure generates JCL member $I98DROP. You can use this member to drop DB2 structures that are created during installation or that become obsolete as a result of subsequent installations. This capability is useful if you cancel, restart, or upgrade an installation.

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Beginning with version 1.5.30, the Install System renames a copy of $I98DROP to $I98*ssid*, where *ssid* is the four-character DB2 subsystem ID that is associated with the installation. The Install System then places $I98*ssid* into the *HLQ*.CNTL library. In future installations (those that use Install System version 1.5.31 or later), you can easily remove DB2 structures from an earlier installation by submitting the $I98*ssid* job in the *HLQ*.CNTL library that is associated with the earlier installation.

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Migrating DB2 Objects Between Releases

Summary: When you install a new release, you can copy data from an old release to the new release, using identical DB2 object names (for example, database and table names). To use existing DB2 object names for a new release, follow the procedure below and refer to the example job listing in Figure 2-5 on page 2-27.

Warning! Using the same object names between releases is not recommended because it replaces your current DB2 structures.

To Use Existing DB2 Object Names for a New Release

Step 1 When the Object/Storage Verification panel prompts you, select the option to migrate data.

Step 2 Change the DB2 object names of the BMC Software product to your naming conventions.

Step 3 After you generate the installation batch jobs, run all of the jobs that are listed before $*xnn*INST.

Step 4 Run the first $*xnn*MIG job to unload the data from the current DB2 databases.

Step 5 Drop the current DB2 databases for the BMC Software product, using $I98DROP from the previous install JCL.

Step 6 Resume installation with job $*xnn*BNDI (to bind the install plan just freed) until you get to the first $*xnn*MIG job.

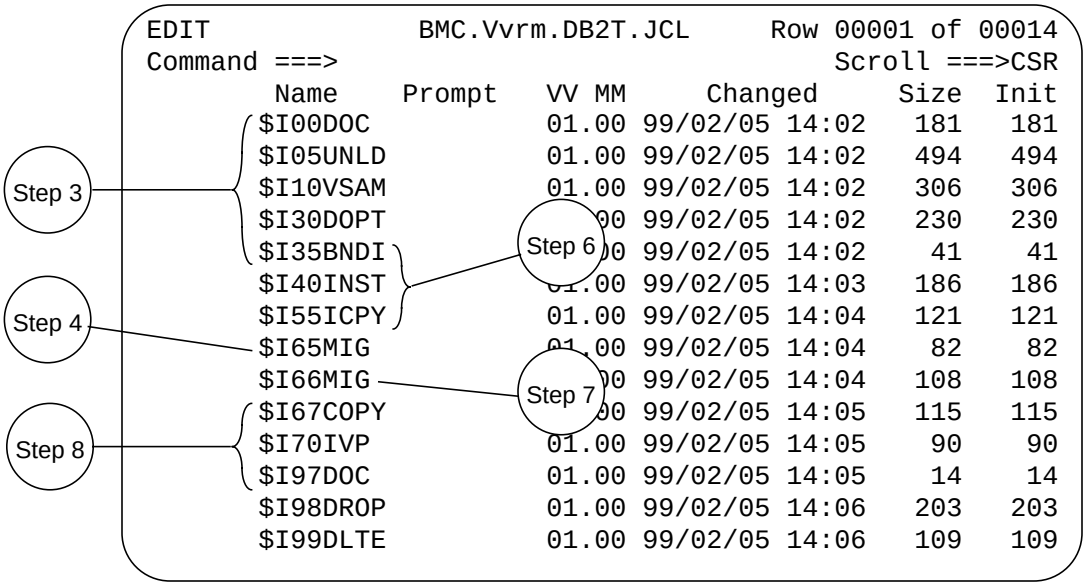
Step 7 Run the second $*xnn*MIG job to load the data into the new tables.

Step 8 Run the remaining jobs, starting with $*xnn*COPY and ending just before $I98DROP.

Warning! Do not run $I98DROP or $I99DLTE until you are ready to uninstall the product.

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Figure 2-5 Sample Installation Batch Jobs



Cancelling the Installation

At times it is necessary to cancel the installation process and revert to the previous level of a product or a product tape set. You should ensure that a complete backup of your current system is available prior to beginning your installation.

Reverting to Conditions Prior to a Tape Installation

If you used new plan names, table names, and repository names during a single-tape or merged-tape installation, then you can easily revert to the product level that was in place prior to the new installation. Modify the newly-generated JCLs to refer to the previous product libraries. To start those products that have an ISPF or a graphical user interface, you can then invoke the previous CLISTs or desktop shortcuts.

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Reverting to the Prior Version of an Individual Product

Some products have interdependencies that you must consider before cancelling or backing out of an installation. Reverting to the prior version of an individual product may require reverting to the prior version of one or more other products. BMC Software recommends that you cancel the entire tape set installation, then reinstall only the desired products.

Where to Go From Here

After you complete the tasks in this chapter, you have completed the primary installation for the BMC Software products that you selected. You can now perform additional installation tasks, or perform post-installation tasks as required for the installed products.

Task	Where to Go
perform post-installation tasks	See Chapter 4, “Performing Post-Installation Tasks”.
perform an SSID installation for an additional DB2 subsystem	See “SSID Installation” on page 1-15.
perform a Multiple SSID installation for several DB2 subsystems	See “Multiple SSID Installation” on page 1-17.

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Chapter 3 Performing Additional Installation Tasks

This chapter presents the following topics:

Performing Additional Tasks for Installation 3-2
Installing Products at Different Times 3-2
    Generating ISPF Interfaces 3-3
    Full Installation or Initial Maintenance 3-3
    SSID Installation or Subsequent Maintenance 3-3
Upgrading Shared Components 3-4
Interacting with Other BMC Software Products 3-6
    ALTER and CHANGE MANAGER 3-6
    CATALOG MANAGER 3-7
    DASD MANAGER PLUS 3-9
    SQL Explorer with DASD MANAGER PLUS 3-11
Refreshing Default Options 3-13
    Setting User Options Using DOPTs 3-14
    Catalog Indirection Default Options 3-16
    Single and Multiple Installation Default Modules 3-16
Using Catalog Indirection 3-17
    Considerations for Using a Copy of the Catalog 3-19
    Considerations for Using Views of the Catalog 3-20
    Implementing Catalog Indirection 3-20
    Creating Collection Names for Multiple Indirect Catalogs 3-22
    Post-Installation Considerations for Catalog Indirection 3-23
Naming Conventions 3-23
Upgrading ALTER to CHANGE MANAGER 3-27
    Migrating Data From ALTER to CHANGE MANAGER 3-28
Maintaining BMC Software Administrative Products 3-30
    Migrating from DB2 Version 5 to Version 6 3-30
    Migrating from DB2 Version 4 to Version 5 3-35
Post-Installation Tasks 3-40

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Performing Additional Tasks for Installation

Table 3-1 lists the tasks you may want to perform when you install BMC Software products.

Table 3-1 Additional Tasks for Installation

Task	Reference
Use the Install System to install BMC Software products at different times.	See “Installing Products at Different Times” on page 3-2.
Upgrade components that are shared by the Administrative Products.	See “Upgrading Shared Components” on page 3-4.
Use the Install System to allow the Administrative Products to interact with the BMC Software Utility and Backup and Recovery products.	See “Interacting with Other BMC Software Products” on page 3-6.
Reset the option values in the user profiles.	See “Refreshing Default Options” on page 3-13.
Use the Install System to install catalog indirection.	See “Using Catalog Indirection” on page 3-17.
Upgrade ALTER to CHANGE MANAGER at the same or higher maintenance level.	See “Migrating Data From ALTER to CHANGE MANAGER” on page 3-28.
Maintain BMC Software Administrative Products when you migrate between versions of DB2.	See “Maintaining BMC Software Administrative Products” on page 3-30.

When you complete the installation, refer to Chapter 4, “Performing Post-Installation Tasks” to perform post-installation tasks.

Installing Products at Different Times

The Install System allows you to install multiple products simultaneously. However, you can install BMC Software products at different times. If you install the products at different times and any of the products share the same APF-authorized load library, you need to bind the products to the shared JCL Generation and Execution Monitor components. To bind the products, complete the steps in “Upgrading Shared Components” on page 3-4.

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Generating ISPF Interfaces

Note: This section addresses only those BMC Software products that provide an online dialog.

The Install System generates an ISPF interface to run many of the BMC Software products. The interface consists of a CLIST (BMCDB2), a panel (BMCDB2PR), and an optional table (BMCDB2TB). You can use this combination without making changes to your TSO logon procedure. For new users, BMC Software recommends that you use the supplied ISPF interface.

Full Installation or Initial Maintenance

The BMCDB2 CLIST uses the ISPF LIBDEF command to allocate all of the BMC Software product libraries. The Install System customizes BMCDB2 and BMCDB2PR to include the data set names that you used during the installation. The Install System specifies up to two DB2 load libraries and specifies each product's default options (DOPTs) module name to support the DB2 subsystem where the product is installed.

Note: You must perform a separate Full installation for every version of DB2 on which the ALTER and CHANGE MANAGER products will run. These products require separate libraries for each version of DB2.

SSID Installation or Subsequent Maintenance

The Install System generates member BMCDB2SS to support the subsequent DB2 subsystems. This member contains logic for the DOPTs module allocation. When you use this member to update the BMCDB2 CLIST, consider the following:

- If you have MVS/ESA and TSO/E version 2.1 or later, the Install System prompts you for the location of the BMCDB2 CLIST and automatically updates it with the information in the BMCDB2SS.

- If you do not have MVS/ESA and TSO/E version 2.1 or later, follow the directions in BMCDB2SS for updating the BMCDB2 CLIST. If CATALOG MANAGER is being installed, follow the instructions for modification of the CATALOG MANAGER plan name.

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Upgrading Shared Components

All Administrative Products share the following components:

- JCL Generation, which controls the JCL generation process
- Execution Monitor, which controls worklist processing by reading and performing worklist commands

When you unload Administrative Products from the distribution tape, these components are also unloaded. The Install System copies these components to an APF-authorized load library that is shared by any of the Administrative Products.

When you are completing a Maintenance installation, you must bind each product to the new level of the components, if the products are using the same APF-authorized load library.

Note: To share the same APF-authorized load library, the products must be at the same version and release levels.

For example, you have ALTER version 5.4.04 and DASD MANAGER PLUS version 5.4.04 installed, and you are using the same APF-authorized load library. If you want to upgrade to version 6.1.01 for ALTER only, you need to bind DASD MANAGER PLUS to the new JCL Generation and Execution Monitor components.

Note: If you do not properly bind all Administrative Products that share the common components, any attempts to generate JCL or to run worklists can cause SQLCODES -805 and -818. The product that has not been bound or upgraded will not run.

You do not have to bind a product separately to the shared components if the following conditions exist:

- You are using the same APF-authorized load library and you are upgrading all of your products, which are at the same version and release level, at the same time. The binds will be done during the upgrade.
- You are using separate APF-authorized load libraries for your products.

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Table 3-2 shows which server and client versions are equivalent to specific mainframe product versions.

Table 3-2 Version Equivalents for the Mainframe, Server, and Client

Product	Mainframe Version	Server Version	Client Version
ALTER	6.2.01	6.2.01	6.2.01
	6.1.02	6.1.02	6.1.02
	6.1.01	6.1.01	6.1.01
	5.4.04	3.1.02	3.1.02
	5.4.04	3.0.02	3.0.01
	5.4.03	3.0.01	3.0.01
	5.4.02	2.2.08	2.2.06
	5.4.01	2.2.07	2.2.06
CHANGE MANAGER	6.2.01	6.2.01	6.2.01
	6.1.02	6.1.02	6.1.02
	6.1.01	6.1.01	6.1.01
	5.4.04	3.1.02	3.1.02
	5.4.04	3.0.02	3.0.01
	5.4.03	3.0.01	3.0.01
	5.4.02	2.2.08	2.2.06
	5.4.01	2.2.07	2.2.06

To bind a product to the shared components, follow these steps:

1. Edit the product's BIND packages and plans, which are in the *HLQ*.CNTL data set. The member names are as follows:

*prdssid*P	package BIND jobs
*prdssid*B	plan BIND jobs (including CATALOG MANAGER plan BIND jobs for indirection)
*prdssid*Z	package and plan BIND jobs for indirection (except CATALOG MANAGER plan BIND jobs)

   The variable *prd* is the product code, and *ssid* is the subsystem ID.

   The product codes are as follows:

   - ALU (for ALTER)
   - ACT (for CATALOG MANAGER)
   - ACM (for CHANGE MANAGER)
   - ASU (for DASD MANAGER PLUS)

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2. Concatenate the new *HLQ*.DBRM library ahead of the old *HLQ*.DBRM library in the DBRMLIB DD statement in these members.

3. Submit the BIND jobs.

4. Repeat for the next product if applicable.

Interacting with Other BMC Software Products

If you have any of the BMC Software Utilities products or the Backup and Recovery products, the Install System enables all the Administrative Products to interact with those products. The following sections provide additional steps you must follow to allow the products to interact with each other.

Note: If you merged the different product tapes during the unload of the Install System and you associated the products on the Install System Product to Product Interface Panel, the Install System performs these additional steps for you.

If you are installing products from different distribution tapes without merging the tapes, be sure to install the Utilities products and the Backup and Recovery products before you install the Administrative Products.

ALTER and CHANGE MANAGER

ALTER and CHANGE MANAGER can interact with the BMC Software Utilities BMCUTIL and BMCSYNC tables to provide STARTOVER capability. For example, while you are performing a reorganization by using the BMC Software REORG PLUS utility from the CHANGE MANAGER product, you receive an error and the utility stops running. You can request a STARTOVER that deletes the utility ID in the BMCUTIL and BMCSYNC tables before proceeding with the reorganization. If the CHANGE MANAGER synonyms do not point to the correct tables, you must delete the utility ID manually in the BMCUTIL and BMCSYNC tables before starting over.

ALTER and CHANGE MANAGER use the following synonyms:

- BMC_UTILITY for the BMCUTIL table
- BMC_UTIL_SYNC and BMC_UTIL_SYNC2 for the BMCSYNC table

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Update your product's synonyms if

- your current synonyms do not point to the correct tables
- ALTER or CHANGE MANAGER accesses the utility tables during batch processing

To update the synonyms, complete the following steps:

1. Drop the current utility synonyms for ALTER or CHANGE MANAGER.

2. Create the new ALTER or CHANGE MANAGER utility synonyms by using the same synonym names, but with the correct table names.

3. Bind the package AEXEUTID into the main collection ID for ALTER or CHANGE MANAGER.

The *HLQ*.INSTALL member DCI#AEXU provides an example of a worklist.

If the utilities are installed in a different load library, complete the following steps:

1. Find the member in the *HLQ*.CNTL library that has the same name as the DOPTs module.

2. Update the first available steplib option (SL1, SL2, and so on) in the ALTER or CHANGE MANAGER DOPTs member to use the different utilities load library. For a description of the steplib options, see the following chapters:

   - Chapter 5, "Installing ALTER"
   - Chapter 7, "Installing CHANGE MANAGER"

3. Add any additional load libraries to SLIB member AJXSTEPU.

CATALOG MANAGER

CATALOG MANAGER can interact with the BMCUTIL, BMCHIST, and BMCSYNC tables to provide BMC Software utility control, status, and history information. (History information is not provided for the BMC Software RECOVER PLUS for DB2 product.)

CATALOG MANAGER uses the following synonyms:

- BMC_UTILITY for the BMCUTIL table
- REORG_HISTORY for the BMCHIST table
- BMC_UTIL_SYNC and BMC_UTIL_SYNC2 for the BMCSYNC table

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CATALOG MANAGER assumes that all BMC Software Utilities products share these tables. You should examine these synonyms and verify that the table names are correct.

Update your synonyms if

- your current synonyms do not point to the correct tables
- CATALOG MANAGER accesses the utility tables during batch processing

To update the synonyms, complete the following steps:

1. Drop the CATALOG MANAGER utility synonyms.

2. Create new CATALOG MANAGER utility synonyms by using the same synonym names, but with the correct table names.

3. Bind the packages ACTCSQRH, ACTDDQRH, and ACTCSQBU into the main collection ID for CATALOG MANAGER.

4. Bind the CATALOG MANAGER BMC Software Utility History Plan. BMC Software specifies this plan as ACT*vrm*DH, where *vrm* is the version, release, and maintenance level. Use the existing plan bind source to create this plan, then change the name.

5. Edit the member in the *HLQ*.CNTL library that has the same name as the DOPTs module. Change HPLAN= to the plan that was created in Step 4. Submit the job to reassemble the DOPTs module.

The *HLQ*.INSTALL member DCI#ACTU provides an example of a worklist.

If the utilities are installed in a different load library, complete the following steps:

1. Find the member in the *HLQ*.CNTL library that has the same name as the DOPTs module.

2. Update the CATALOG MANAGER DOPTs values for UCSTP, UDSTP, UESTP, UKSTP, ULSTP, URSTP, UUSTP, and UVSTP to use the different utilities load library. For a description of these DOPTs options, see Chapter 6, “Installing CATALOG MANAGER.”

3. Add any additional load libraries to SLIB member AJXSTEPU.

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DASD MANAGER PLUS

If you plan to use DASD MANAGER PLUS with the BMC Software REORG PLUS, LOADPLUS®, or COPY PLUS for DB2 products and you did not merge the products during the unload of the Install System, you must point the utility synonyms to the correct DASD MANAGER PLUS tables and point the DASD MANAGER PLUS synonyms to the appropriate utility tables.

Pointing the Utility Synonyms to the DASD MANAGER PLUS Tables

If the BMCSTATS runtime option is used, REORG PLUS, LOADPLUS, or COPY PLUS can update the DASD MANAGER PLUS statistics tables to update statistical information. Table 3-3 shows the synonyms that the REORG PLUS and LOADPLUS utilities use to reference the corresponding tables for DASD MANAGER PLUS.

Table 3-3 DASD MANAGER PLUS Table Synonyms for REORG PLUS and LOADPLUS

Synonym	DASD MANAGER PLUS Table
*prdvr*_RS_TABLSPACE	BMCASU*yy*.V*yy*_RS_TABLESPACE
*prdvr*_RS_TABLEPART	BMCASU*yy*.V*yy*_RS_TABLEPART
*prdvr*_RS_TABLES	BMCASU*yy*.V*yy*_RS_TABLES
*prdvr*_RS_INDEXES	BMCASU*yy*.V*yy*_RS_INDEXES
*prdvr*_RS_INDEXPART	BMCASU*yy*.V*yy*_RS_INDEXPART

Table 3-4 shows the synonyms that the COPY PLUS utility uses to reference the corresponding tables for DASD MANAGER PLUS.

Table 3-4 DASD MANAGER PLUS Table Synonyms for COPY PLUS

Synonym	DASD MANAGER PLUS Table
BMCACP_BMCXTBSP	BMCASU*yy*.V*yy*_RS_TABLESPACE
BMCACP_BMCXTBPT	BMCASU*yy*.V*yy*_RS_TABLEPART
BMCACP_BMCXTBLS	BMCASU*yy*.V*yy*_RS_TABLES

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The variables in Table 3-3 and Table 3-4 are defined as follows:

- *prd* is the product code ARU for REORG PLUS or AMU for LOADPLUS
- *vr* is the version and release installed for REORG PLUS and LOADPLUS
- *yy* is the version and release number of your current DASD MANAGER PLUS product. These table names are the default names as shipped and may have changed when DASD MANAGER PLUS was installed.

Examine these synonyms and verify that the table names are correct. If your current REORG PLUS, LOADPLUS, or COPY PLUS synonyms do not point to the tables listed in Table 3-3 or Table 3-4, complete the following steps to update them:

1. Drop the REORG PLUS, LOADPLUS, or COPY PLUS synonyms.
2. Create the new REORG PLUS, LOADPLUS, or COPY PLUS synonyms by using the same synonym names, but with the correct DASD MANAGER PLUS table names.
3. Bind the REORG PLUS, LOADPLUS, or COPY PLUS BMCSTATS plan. BMC Software specifies this plan as ARUT*vrmm*, AMUT*vrmm*, or ACPC*vrmm*, where *vrmm* is the version, release, and maintenance level.

   Note: If DASD MANAGER PLUS tables are not connected or installed when you install REORG PLUS, LOADPLUS, or COPY PLUS, then the plan binds will complete with RC=4.

4. If you want to use DASD MANAGER PLUS with COPY PLUS, run the ACP*ssid*C ICOPY installation job.

The *HLQ*.INSTALL member DCI#ASUR for REORG PLUS, member DCI#ASUL for LOADPLUS, and member DCI#ASUC for COPY PLUS provide examples of a worklist for Step 1 and Step 2.

Pointing the DASD MANAGER PLUS Synonyms to the Utility Tables

DASD MANAGER PLUS uses the following synonyms:

- BMC_UTILITY for the BMCUTIL table
- BMC_UTIL_SYNC and BMC_UTIL_SYNC2 for the BMCSYNC table

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Update your synonyms if

- your current synonyms do not point to the correct tables
- DASD MANAGER PLUS accesses the utility tables during batch processing

To update your synonyms, complete the following steps:

1. Drop the current utility synonyms for DASD MANAGER PLUS.

2. Create the new DASD MANAGER PLUS utility synonyms by using the same synonym names, but with the correct table names.

3. Bind the package AEXEUTID into the main collection ID for DASD MANAGER PLUS.

The *HLQ*.INSTALL member DCI#AEXU provides an example of a worklist.

If the utilities are installed in a different load library, complete the following steps:

1. Find the member in the *HLQ*.CNTL library that has the same name as the DOPTs module.

2. Update the first available steplib option (SL1, SL2, and so on) in the DASD MANAGER PLUS DOPTs member to use the different utilities load library. For a description of the steplib options, see Chapter 8, “Installing DASD MANAGER PLUS.”

3. Add any additional load libraries to SLIB member AJXSTEPU.

SQL Explorer with DASD MANAGER PLUS

If you plan to use the SQL Explorer function of migrating statistics from the DASD MANAGER PLUS statistics tables and you did not establish a connection between the products during the installation process, you must point the PATROL SQL-Explorer synonyms to the correct DASD MANAGER PLUS tables.

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Pointing the SQL Explorer Synonyms to the DASD MANAGER PLUS Tables

Table 3-5 shows the SQL Explorer synonyms that are used to access the DASD MANAGER PLUS tables in the Migrate Statistics function when BMCSTATS is the source of the data. *You must not change the synonym names.* The default naming standard for the tables assumes that *yy* is the version and release number of the DASD MANAGER PLUS product. These table names are the default names as shipped and may have changed when DASD MANAGER PLUS was installed.

Table 3-5 SQL Explorer Synonyms

Synonym	DASD MANAGER PLUS Table
BMCPSS_SCOLDIST	BMCASU*yy*.V*yy*_RS_COLDIST
BMCPSS_SCOLDISTSTA	BMCASU*yy*.V*yy*_RS_COLDISTSTAT
BMCPSS_SCOLSTATS	BMCASU*yy*.V*yy*_RS_COLSTATS
BMCPSS_SCOLUMNS	BMCASU*yy*.V*yy*_RS_COLUMNS
BMCPSS_SINDEXES	BMCASU*yy*.V*yy*_RS_INDEXES
BMCPSS_STABLES	BMCASU*yy*.V*yy*_RS_TABLES
BMCPSS_STABLESPACE	BMCASU*yy*.V*yy*_RS_TABLESPACE

Examine these synonyms and verify that the table names are correct. If your current SQL Explorer synonyms do not point to the correct DASD MANAGER PLUS tables, complete the following steps to point the synonyms to the correct tables:

1. Drop the seven SQL Explorer synonyms.

2. Recreate new SQL Explorer synonyms by using the same synonym names, but pointing to the correct DASD MANAGER PLUS table names. The synonym qualifier must be the same one that was used to perform the BINDS for the SQL Explorer installation.

The *HLQ*.INSTALL member DCI#PSSD provides examples of a worklist.

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Refreshing Default Options

If you need to reset the values in user profiles, the BMC Software Administrative Products provide a refresh feature. This feature modifies one or more option values for all of the product's users. To refresh an option value in all existing user profiles, enclose the option value in parentheses and include `,R` after the value inside the parentheses, as in the following example:

```
SSID=(DB2J,R),
```

This example refreshes the default subsystem ID for all of the product's users.

Note: Do not drop either the continuation comma after the closing parenthesis or the continuation character in column 72.

For products other than CATALOG MANAGER, the `,R` in the variable syntax indicates that the value specified will refresh the existing value of the variable in the user's ISPF profile data set, if the timestamp of the DOPTS is later than that in the user's ISPF profile member. However, the user can change the override value in the user profile. In CATALOG MANAGER, the refresh occurs every time that a user starts the product.

If your user options do not successfully refresh, complete the following steps:

1. Verify that the refresh option is coded on the correct macro listing keyword in the DOPTs assembly member.

2. Verify that the DOPTs assembly completed successfully with a return code of 0.

3. Verify that the assembled DOPTs member is the same DOPTs member that the Administrative Products use.

   To verify, type **ENVI** on the command line within the product. Compare the listed DOPTs module name with the name of the DOPTs module that you assembled and link edited.

4. Verify that the DOPTs module assembly is updating the correct load library.

   The `SYSLMOD ddname` statement should reference the load library where the Administrative Products reside.

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Unlike the other DOPTs parameters, the plan names are used directly by the product. If you must specify different plan-name values for each subsystem, you need multiple DOPTs modules.

For additional information about setting the products' options, see the chapters that address specific products.

Setting User Options Using DOPTs

The purpose of the DOPTs module is to establish installation-wide default values. You can change many of these values on an individual basis using each product's user options. Unlike DOPTs, user options are saved and maintained in a user's ISPF profile data set under the name *xxxx*PROF, where *xxxx* is the ISPF application ID under which the product is running.

The BMCDB2 CLIST allocates the ISPF application ID based on DB2 subsystem access. During a Full installation or an SSID installation, the Install System attempts to make each ISPF application ID unique across DB2 subsystems.

By default, the first time that the Install System generates the BMCDB2 CLIST, the application ID *prd*A is allocated, where *prd* is one of the following codes:

- ALU (for ALTER)
- ACM (for CHANGE MANAGER)
- ASU (for DASD MANGER PLUS)
- ACT (for CATALOG MANAGER)

Note: During the installation, if you interface to an existing version of SQL Explorer, an application ID of PSS will be added to the CLIST.

For the second and subsequent installations using SSID Install, the Install System attempts to scan the existing BMCDB2 CLIST and to allocate a unique application ID. For example, if ALTER is initially installed on DB2T, the application ID is ALUA. If ALTER is installed on DB2P, the Install System scans the BMCDB2 CLIST and uses application ID ALUB because ALUA is already in use.

Refer to "Single and Multiple Installation Default Modules" on page 3-16 for more information about how to customize the BMCDB2 CLIST.

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When a user accesses an Administrative Product, the BMCDB2 CLIST establishes the ISPF application ID and allocates the DOPTs module name. The product that receives control either initializes or refreshes the user's options with the information from the DOPTs module that are allocated by the BMCDB2 CLIST.

Avoiding User Options Overlay

In some situations, when you make changes in one environment, those changes appear in another environment. This situation usually happens when the same ISPF application ID is being established for multiple SSIDs, and is probably unacceptable because the user-option changes are SSID specific.

For example, if both of the DB2T and DB2P application IDs for ALTER are established as ALUA, any user option changes that are made for DB2T are also made for the DB2P user options.

To avoid accidentally overlaying user options, ensure that the ISPF application that is established for each DB2 SSID is unique. The Install System attempts to make each application ID unique in a given BMCDB2 CLIST. It does not, however, make each application ID unique across multiple BMCDB2 CLISTs. For example, if you execute a Full installation for DB2T and a Full installation for DB2P, you have two BMCDB2 CLISTs—one for each environment. The initial ISPF application ID for both SSIDs is *xxxA*, which results in an overlay.

To correct overlay problems, follow these steps for each BMCDB2 CLIST that you are using:

1. Edit the BMCDB2 CLIST.
2. Proceed to the *DATA line.
3. For each SSID, make sure that the APPLID is unique across all BMCDB2 CLISTs, as shown in Figure 3-1.

Figure 3-1 Sample BMCDB2 CLIST

```
*DATA
*PROD SSID D/I DOPT     PLAN   APPL COLL_ID            NICKNAME
*----|----|-|--------|--------|----|------------------|-----------------
 ALU  xxxx D ALUDOPD1 ALvrmDDF ALU#                                    *
 ASU  xxxx D ASUDOPD1 ASUvrmDC ASU#                                    *
 ACT  xxxx D ACTDOPD1 ACTvrmDM ACT# ACTvrm_D_MAIN      DBBF            *
 ACM  xxxx D ACMDOPD1 CMvrmEDF ACM#                                    *
```

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In the sample shown in Figure 3-1, the variable *xxxx* is the SSID name and # is a unique one-byte character (such as A for the first SSID, B for the second SSID, C for the third, and so on).

Catalog Indirection Default Options

When accessing the DB2 catalog with catalog indirection, the BMCDB2 CLIST allocates an indirect DOPTs module. This *indirect* DOPTs module must have a different name than the *direct* DOPTs module that was previously built. The exception is CATALOG MANAGER, which uses a single DOPTs module for both direct and indirect access. For more information about catalog indirection, refer to “Using Catalog Indirection” on page 3-17.

Single and Multiple Installation Default Modules

The module *prd*DOPD1 (where *prd* is the product code) establishes default processing options for a particular product. You can generate one DOPTs module for all of a product’s SSIDs to share, or you can generate customized DOPTs modules for each SSID.

Because you can override many of the default processing option parameters for Administrative Products through the ISPF panels, you do not need to establish a separate *prd*DOPD1 module on each DB2 SSID for each product. However, establishing separate default processing options for each DB2 SSID may be more convenient (to minimize key strokes, for example). The exceptions are the graphical user interface (GUI) for ALTER and CHANGE MANAGER, which use the SSID value in the DOPTs to know to which SSID to connect.

*prd*DOPD1 Options Module

The job that assembles and links the installation DOPTs module is named $*xnn*DOPT in the JCL data set that the Install System uses to install the product (*HLQ*.INSTALL.JCL). A copy of a stand-alone DOPTs job is placed in the *HLQ*.CNTL library. When run, this job creates a DOPTs module in the products’ load library. The default name of the DOPTs stand-alone job and module is *prd*DOPD1, where *prd* is the three-letter product code:

- ALU (for ALTER)
- ACT (for CATALOG MANAGER)
- ACM (for CHANGE MANAGER)
- ASU (for DASD MANAGER PLUS)

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You can change this name in the Install System panels. Keep track of any name changes that you make.

Single Options Module

If the DB2 subsystems are using the same product load library, they may optionally share the same options load module in that library. If you generate only one options module for the load library, users must override the options that relate to a specific DB2 subsystem at the beginning of a session for each product. These parameters are saved in the user's ISPF profile and are preserved across ISPF sessions. The exceptions are the GUI for ALTER and CHANGE MANAGER, which use the SSID value in the DOPTs to know to which SSID to connect.

Multiple Options Modules

You can specify separate *prd*DOPD1 modules for each SSID by using a unique name for each module. The Install System panels prompt you for the names, and you can assign names that identify the SSIDs on which you are installing the product.

In most cases, only the SSID name will be different for each DOPTs module. BMC Software recommends that you include the refresh feature for this option, which causes the program to use the SSID from the DOPTs module rather than the SSID that was last saved in your ISPF profile. You do not need to specify different plan names or object names for subsequent products or SSID systems.

When you start the product through the Install System's ISPF interface, the unique name of the DOPTs module for each SSID is passed to the product.

Using Catalog Indirection

Catalog indirection is an optional method of implementing and maintaining the Administrative Products. As the name implies, catalog indirection allows products to access the DB2 catalog indirectly when making information queries. To accomplish catalog indirection, ALTER, CHANGE MANAGER, and CATALOG MANAGER use synonyms that point either to a copy of the DB2 catalog or to user-created views of the catalog.

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Catalog indirection applies only to catalog queries. Any action that changes information in the catalog must operate on the actual catalog, not the catalog's copy or view. For example, when you issue a command through CATALOG MANAGER to update the catalog, the action affects the actual catalog. In contrast, the ALTER and CHANGE MANAGER Analysis programs can use either the actual catalog or catalog indirection when creating worklists. However, the Execution Monitor in ALTER and CHANGE MANAGER always runs a worklist against the actual catalog.

Note: Successful implementation of catalog indirection requires an in-depth understanding of the DB2 environment and its catalog structure, and experience in maintaining DB2 applications. Each method of implementing catalog indirection should be managed as if it were a DB2 application.

General points about catalog indirection are as follows:

- The synonyms that reference the DB2 catalog are hard-coded in the Administrative Products. You direct the synonyms to the catalog, copy, or views during installation by providing information on the Install System panels.

- When you install Administrative Products with the Install System, the product is set up to access the DB2 catalog directly. After the installation, you can use the Install System to implement and maintain catalog indirection.

- You can use the same copy or view of the catalog for all Administrative Products, or you can implement catalog indirection through separate copies or views for each product.

- Catalog indirection can provide either of two benefits: reducing contention for the DB2 catalog or providing an additional level of security for sensitive data in the catalog. The following sections provide details.

Note: Although you can implement a view of a copy of the catalog and simultaneously reap both benefits of catalog indirection, this approach is extremely complex to maintain and is not recommended.

Reducing Catalog Contention

For data centers that have high DB2 transaction rates, contention for the DB2 catalog can be a problem. Because the Administrative Products require frequent access to the DB2 catalog, they can contribute to catalog contention.

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When you direct the information queries from specific groups of users to a recent copy of the DB2 catalog, the Administrative Products can reduce catalog contention. The products also perform better because they do not have to compete with other applications for DB2 catalog information.

The copy of the catalog can be tuned to improve the performance of the Administrative Products. If you are using DB2 Version 4 or later, you can add your own indexes to the copy of the catalog. You can also reorganize the tables or table spaces of the catalog copy. For information about performance considerations, see “Performance Considerations” on page 4-2.

For catalog indirection to be effective, you must ensure that the copy of the catalog reflects the status of the actual catalog. The degree of accuracy that is required depends on the type of users who are involved and the purpose of their information queries. The job that updates the catalog copy temporarily halts all information queries made through the copy.

Controlling Catalog Access

Data centers with highly sensitive information may need to restrict how users access specific tables in the DB2 catalog. To restrict catalog access, you can implement catalog indirection through one or more user-created views that filter out specified columns within the DB2 catalog tables. You can allow specific user groups to use the Administrative Products in a limited fashion without compromising the security of the data or data structures that are defined in the catalog tables.

Considerations for Using a Copy of the Catalog

Maintaining a copy of the catalog uses additional DASD space. The amount of space that is required equals the size of your DB2 catalog and can vary greatly, depending on your DB2 system.

For example, assume that a user uses the Administrative Products to perform an activity that changes information in the DB2 catalog. The user then completes a task that performs an information query against the copy of the catalog. In this case, it may seem that the first activity did not succeed. However, if you implement catalog indirection only for users who are already restricted to information-only queries, this problem may not occur. For example, you could implement catalog indirection for those ALTER users who are not allowed to run the Execution Monitor.

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You need to update the copy of the catalog on a timely basis to keep it accurate. Running the copy job does not have a significant impact on catalog contention but does consume other system resources. How often you should run the job depends on the amount of catalog change activity in your DB2 system and the type of users who are restricted to accessing a copy. A high-activity data center may need to run the job several times a day.

Also, the job that updates the catalog copy prevents users from accessing the current copy of the catalog while the job runs. This restriction may have an undesirable impact on the Administrative Products if you must run the copy job during a high-activity period.

The SEARCH command in CATALOG MANAGER uses dynamic structured query language (SQL). To enable the SEARCH command to work on the copy of the catalog that catalog indirection uses, either run GRANT SELECT ON TABLE statements or bind with Dynamic Rules (BIND) on the main plan.

Considerations for Using Views of the Catalog

To control access to sensitive information in your catalog tables, you must design a view or a set of views on your system catalog that achieves the control that you need. To define the view that a particular catalog indirection access method uses, you must edit the CREATE VIEW statements in the BMCCVIEW member that the Install System generated. You must also add to the BMCCVIEW member the DML search criteria that limits access to selected rows of the catalog.

When a user attempts to access catalog information that a view filters out, an SQL error occurs. Also, you must manage the authorizations to the groups of users who are allowed to access the DB2 catalog through a view or views.

Implementing Catalog Indirection

Implementing catalog indirection

- uses existing product libraries
- allows use of your own VSAM data sets (which requires Custom mode)
- optionally creates a copy of the DB2 catalog using the CREATE LIKE DDL syntax
- optionally creates views of the DB2 catalog

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Catalog indirection is divided into two tasks:

- installation
- maintenance

Fully test the Administrative Products without catalog indirection before you implement it. Catalog indirection is an optional feature that you can implement only after the product is installed.

Installation

You can install catalog indirection for one or more Administrative Products on one DB2 subsystem at a time. Implement catalog indirection to create a copy or view of the DB2 catalog, if you have not previously created one.

Maintenance

You can apply maintenance to catalog indirection on one or more Administrative Products on one DB2 subsystem at a time. Perform maintenance if you have an existing copy or view of the DB2 catalog and have performed a new installation of the Administrative Products.

If you are applying maintenance to catalog indirection, you must specify the synonym qualifier that is currently the owner of the products' synonyms. This qualifier must be the qualifier that you supplied when you originally installed catalog indirection for the products. The Install System automatically sets the qualifier status to USED/REUSE.

Catalog-indirection maintenance does not create any new DB2 objects, but it does recreate the existing synonyms. Because the Install System automatically sets the qualifier status to USED/REUSE, the synonyms are dropped and then re-created.

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Synonym Qualifiers, Default Options, and Plan Names

When one of the Administrative Products runs, it uses its own DOPTs module that was built during installation. The BMCDB2 CLIST allocates the DOPTs module name when you start the product. When you request indirect access, the product allocates a DOPTs module that is different from the direct access options module. Contained in this DOPTs module are the plans that are used when certain product functions are executed.

Note: CATALOG MANAGER 3.3 or later uses a single DOPTs module for both direct access and indirect access. The BMCDB2 CLIST allocates the same DOPTs module and the same plan for direct access and indirect access. The plan that is accessed contains two distinct collection IDs that are used to access direct or indirect catalogs.

The qualifier of the plan and the packages is used to resolve synonyms that point to either a view of the DB2 catalog or a copy of the DB2 catalog, depending on the method of implementation.

The DOPTs module, the plan and collection names, and the synonym qualifier are all crucial for the implementation of catalog indirection. You should understand their use and interaction before you implement catalog indirection.

Note: To help maintain catalog indirection, follow the naming conventions described on page 3-23. Naming conventions enable you to look at the DOPTs module or allocated plan and determine whether indirect access or direct access is being used.

The Install System uses a **<--- C-I Parm** indicator to mark values that must be different from the direct access specification. When you see this indicator, supply unique names.

Creating Collection Names for Multiple Indirect Catalogs

With CATALOG MANAGER 3.4 or later, you can have more than one indirect catalog. Each indirect catalog requires a unique collection name. Also, you can assign a collection name alias.

See Chapter 6, “Installing CATALOG MANAGER,” for information about implementing catalog indirection with this product.

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Post-Installation Considerations for Catalog Indirection

After installation, refer to Chapter 4, “Performing Post-Installation Tasks”, for information about how to perform post-installation tasks for catalog indirection.

Naming Conventions

The following sections provide naming conventions.

Synonym Qualifier

The synonym qualifiers have the following conventions:

- *prdvrmy* (all products with the exception of ALTER and CHANGE MANAGER 5.2 or later)
- *prdvrmcy* (ALTER and CHANGE MANAGER 5.2 or later)

Table 3-6 indicates what the variables represent, and Table 3-7 shows examples of the synonym qualifiers.

Table 3-6 Synonym Qualifier Variables

Variable	Represents
prd	product code
vrm	version/release/maintenance level
c	indicates the exploited DB2 version (B=3.1, C=4.1, D=5.1, and E=6.1 or later)
y	access type (D=direct, I=indirect)

Table 3-7 Examples of Synonym Qualifiers

Example	Description
ALU621DD	ALTER 6.2.01 DB2 Version 6 direct access
ALU621DI	ALTER 6.2.01 DB2 Version 6 indirect access
ACT621D	CATALOG MANAGER 6.2.01 direct access

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Options Module

The DOPTs module has the following convention:

*prd*DOP*yz*

Table 3-8 indicates what the variables represent, and Table 3-9 shows examples of DOPTs modules.

Table 3-8 DOPTs Module Variables

Variable	Represents
prd	product code
y	access type (D=direct, I=indirect)
z	SSID indicator

Note: The access type for CATALOG MANAGER 3.3 or later must be direct (D). CATALOG MANAGER 3.3 or later is the only Administrative Product that uses a single DOPTs module for both direct access and indirect access.

Table 3-9 Examples of DOPTs Modules

Example	Description
ALUDOPDT	ALTER direct access test subsystem
ALUDOPIT	ALTER indirect access test subsystem

Plan Names

Plan names have the following convention:

- *prdvrmyz* (all products with the exception of ALTER and CHANGE MANAGER 5.2 or later)
- *ppvrmcyz* (ALTER and CHANGE MANAGER 5.2 or later)

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Table 3-10 indicates what the variables represent, and Table 3-11 shows examples of plan names.

Table 3-10 Plan Name Variables

Variable	Represents
prd or pp	product code
vrm	version/release/maintenance level
c	indicates the exploited DB2 version (B=3.1, C=4.1, D=5.1, and E=6.1 or later)
y	access type (D=direct, I=indirect)
z	plans function

Note: The access type for CATALOG MANAGER 3.3 or later must be direct (D). CATALOG MANAGER 3.3 or later is designed to use a single DOPTs module for both direct and indirect access. Because the plan names are communicated to the products through the DOPTs module, CATALOG MANAGER is the only Administrative Product that requires only a single set of plans for both direct access and indirect access.

Table 3-11 Examples of Plan Names

Example	Description
AL621EDF	ALTER 6.2.01 DB2 Version 6 direct access Front End plan
AL621EIF	ALTER 6.2.01 DB2 Version 6 indirect access Front End plan
ASU613DD	DASD MANAGER PLUS 6.1.03 direct access Object Definition plan

Collection Names

Collection names have the following conventions:

- *prdvrmc_y*_MAIN (ALTER and CHANGE MANAGER)
- *prdvrm_y_#*_MAIN (CATALOG MANAGER)
- *prdvrm_y*_MAIN (DASD MANAGER PLUS)

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Table 3-12 indicates what the variables represent, and Table 3-13 shows examples of collection names.

Table 3-12 Collection Name Variables

Variable	Represents
prd	product code
vrm	version, release, and maintenance level
c	exploited DB2 version (B=3.1, C=4.1, D=5.1, and E=6.1 or later)
y	access (D=direct, I=indirect)
#	a unique qualifier for the indirect catalog on that subsystem

Note: The access type for DASD MANAGER PLUS must be direct (D). With CATALOG MANAGER 3.4 and later, you can have more than one indirect catalog. Each indirect catalog requires a unique collection name.

Table 3-13 Examples of Collection Names

Example	Description
ACT621_I_1_MAIN	CATALOG MANAGER 6.2.01 indirect access, first instance of indirection
ACM621E_D_MAIN	CHANGE MANAGER 6.2.01 DB2 Version 6 direct access
ASU613_D_MAIN	DASD MANAGER PLUS 6.1.03 direct access

Collection Nicknames

You can assign a meaningful *nickname* to the collection name. This nickname provides CATALOG MANAGER users with easy-to-remember names of collections.

Table 3-14 shows an example of collection names that are on the test system DB2T that access indirect copies of production systems DB2P1 and DB2P2, and the corresponding nicknames that could be used.

Table 3-14 Examples of Collection Nicknames

Collection Name	Collection Nickname
ACT621_I_1_MAIN	DB2P1I
ACT621_I_2_MAIN	DB2P2I

The nickname can be up to 13 characters long and cannot contain any blanks.

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Upgrading ALTER to CHANGE MANAGER

To upgrade to CHANGE MANAGER without migrating your existing data in ALTER, perform a Full installation of CHANGE MANAGER. To upgrade to CHANGE MANAGER and to migrate your existing data from ALTER to CHANGE MANAGER, use the following procedure.

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Migrating Data From ALTER to CHANGE MANAGER

Summary: This task describes how you can migrate data from an existing ALTER product environment to the CHANGE MANAGER product environment. To migrate your data from an existing ALTER environment to CHANGE MANAGER, you must have ALTER 3.6 or later installed.

To Install CHANGE MANAGER

Step 1 Perform Step 1 through Step 6 of the procedure “Generating Installation JCL” on page 2-22 to install CHANGE MANAGER and to build a valid $I67COPY image copy job.

1.A From the Install System Previous Release of Product panel, select an installed release level for CHANGE MANAGER.

Note: Do not select NONE.

1.B From the Install System CHANGE MANAGER Object/Storage Verification panel, type / to **Select to migrate data from Change Manager *v.r.***

1.C From the Install System CHANGE MANAGER Migration Verification panel, remove the asterisk (*) from the **Creator Name**. The **Creator Name** can be any name.

Step 2 Run all of the installation jobs prior to $I65MIG, $I66MIG, and $I67COPY. Do not run $I65MIG, $I66MIG, and $I67COPY.

To Build Valid Data Migration Jobs

Step 1 Perform Step 1 through Step 5 of the procedure “Generating Installation JCL” on page 2-22 to install ALTER and to build the valid $I65MIG and $I66MIG data migration jobs.

1.A From the Install System Previous Release of product panel, select the current installed release level for ALTER.

1.B From the Install System ALTER Object/Storage Verification panel, perform the following actions:

1. Type the **Database Name** and the **Creator Name** that you used in Step 1 during the CHANGE MANAGER installation.

2. Type / to **Select to migrate data from ALTER *v.r.***

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1.C From the Install System ALTER Migration Table Verification panel, type the **Creator Name** for your existing ALTER tables.

Step 2 Run only the $I65MIG and $I66MIG installation jobs.

To Complete the Migration

Run the $I67COPY installation job that was created when you installed CHANGE MANAGER.

To Fall Back to ALTER

Run the $I98DROP and $I99DLTE installation jobs that were created when you installed CHANGE MANAGER.

Warning! Any data that you added while you had CHANGE MANAGER installed will be lost when you run the $I98DROP and $I99DLTE installation jobs.

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Maintaining BMC Software Administrative Products

The tables in this section provide guidelines that help you to maintain BMC Software Administrative Products when you migrate between the following versions of DB2:

- version 5 to version 6
- version 4 to version 5

Migrating from DB2 Version 5 to Version 6

To maintain BMC Software Administrative Products when you migrate to DB2 Version 6 or when you fall back to DB2 Version 5, use the guidelines in Table 3-15.

Table 3-15 Migrating DB2 Version 5 to Version 6 (Part 1 of 4)

If You Are	Then	To Fall Back Then
using ALTER or CHANGE MANAGER 5.4.03 or earlier, or using PATROL DB-Alter or PATROL DB-Change Manager server 3.0.01 or earlier	Perform a Full installation of ALTER or CHANGE MANAGER 6.2E. Then, you will be operating in exploitation mode.	1. Provided that the previous version of ALTER, CHANGE MANAGER, PATROL DB-Alter, or PATROL DB-Change Manager still exists, remove the product in exploitation mode. 2. For ALTER (ALU) or CHANGE MANAGER (ACM), rebind all packages and plans for the previous version by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID). Any data that you added while you were in exploitation mode will not be available in toleration mode. 3. For PATROL DB-Alter (ALU) or PATROL DB-Change Manager (ACM), rebind all packages and plans for the previous version by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID). Any data that you added while you were in exploitation mode will not be available in toleration mode.

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Table 3-15 Migrating DB2 Version 5 to Version 6 (Part 2 of 4)

If You Are	Then	To Fall Back Then
using ALTER or CHANGE MANAGER 5.4.04D installed on DB2 Version 5, or using PATROL DB-Alter or PATROL DB-Change Manager server 3.0.02 through 3.1.02 installed on DB2 Version 5	1. Migrate the DB2 catalog. 2. Rebind all ALTER (ALU) or CHANGE MANAGER (ACM) packages and plans by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID). 3. For PATROL DB-Alter (ALU) and PATROL DB-Change Manager (ACM), rebind all PATROL DB-Alter or PATROL DB-Change Manager packages and plans for the previous version by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID). Then, you will be operating in toleration mode.	1. Rebind all ALTER (ALU) or CHANGE MANAGER (ACM) packages and plans by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID). 2. For PATROL DB-Alter (ALU) and PATROL DB-Change Manager (ACM), rebind all PATROL DB-Alter or PATROL DB-Change Manager packages and plans for the previous version by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID).
	As an alternative, you can perform a Full installation of ALTER or CHANGE MANAGER 6.2E. Then, you will be operating in exploitation mode.	Provided that ALTER, CHANGE MANAGER, PATROL DB-Alter, or PATROL DB-Change Manager still exists in toleration mode, use the fallback procedures described for toleration mode and remove the product in exploitation mode. Any data that you added while you were in exploitation mode will not be available in toleration mode.
using ALTER or CHANGE MANAGER 6.1D or later installed on DB2 Version 5	1. Migrate the DB2 catalog. 2. Rebind all ALTER (ALU) or CHANGE MANAGER (ACM) packages and plans by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID). Then, you will be operating in toleration mode.	Rebind all ALTER (ALU) or CHANGE MANAGER (ACM) packages and plans for the previous version by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID).
	As an alternative, you can perform a Full installation of ALTER or CHANGE MANAGER 6.2E. Then, you will be operating in exploitation mode.	Provided that ALTER, CHANGE MANAGER, PATROL DB-Alter, or PATROL DB-Change Manager still exists in toleration mode, use the fallback procedures described for toleration mode and remove the product in exploitation mode. Any data that you added while you were in exploitation mode will not be available in toleration mode.

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Table 3-15 Migrating DB2 Version 5 to Version 6 (Part 3 of 4)

If You Are	Then	To Fall Back Then
using CATALOG MANAGER at a version earlier than 5.4.04	Migrate the DB2 catalog and perform a Full installation of CATALOG MANAGER 6.2. Then, you will be operating in exploitation mode.	1. Provided that the previous version of CATALOG MANAGER still exists, remove the product in exploitation mode. 2. Rebind all CATALOG MANAGER packages and plans for the previous version by using ACT*ssid*P (bind packages) and ACT*ssid*B (bind plans) (where *ssid* is the subsystem ID). Any data that you added while you were in exploitation mode will not be available in toleration mode.
using CATALOG MANAGER 5.4.04 or 5.4.05	1. Migrate the DB2 catalog. 2. Rebind all CATALOG MANAGER packages and plans by using ACT*ssid*P (bind packages) and ACT*ssid*B (bind plans) (where *ssid* is the subsystem ID). Then, you will be operating in toleration mode.	Rebind all CATALOG MANAGER packages and plans by using ACT*ssid*P (bind packages) and ACT*ssid*B (bind plans) (where *ssid* is the subsystem ID).
using CATALOG MANAGER 6.1 or later	1. Migrate the DB2 catalog. 2. Run *HLQ*.CNTL(UPGRD5#6). Then, you will be operating in exploitation mode.	Rebind all CATALOG MANAGER packages and plans by using ACT*ssid*P (bind packages) and ACT*ssid*B (bind plans) (where *ssid* is the subsystem ID).
using DASD MANAGER PLUS at a version earlier than 5.4.04	Migrate the DB2 catalog and perform a Full installation of DASD MANAGER PLUS 6.1. Then, you will be operating in exploitation mode.	1. Provided that the previous version of DASD MANAGER PLUS still exists, remove the product in toleration mode. 2. Rebind all DASD MANAGER PLUS packages and plans for the previous version by using ASU*ssid*P (bind packages) and ASU*ssid*B (bind plans) (where *ssid* is the subsystem ID). Any data that you added while you were in exploitation mode will not be available.

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Table 3-15 Migrating DB2 Version 5 to Version 6 (Part 4 of 4)

If You Are	Then	To Fall Back Then
using DASD MANAGER PLUS 5.4.04	1. Migrate the DB2 catalog. 2. Modify the ASUDB26E worklist member in the *HLQ*.JCL library. 3. Execute the worklist using a modified copy of the $I40INST job that the JCL job dialog generated. 4. Rebind all DASD MANAGER PLUS packages and plans by using ASU*ssid*P (bind packages) and ASU*ssid*B (bind plans) (where *ssid* is the subsystem ID). Then, you will be operating in toleration mode.	Rebind all DASD MANAGER PLUS packages and plans by using ASU*ssid*P (bind packages) and ASU*ssid*B (bind plans) (where *ssid* is the subsystem ID).
using DASD MANAGER PLUS 6.1	1. Migrate the DB2 catalog. 2. Run *HLQ*.CNTL(UPGRD5#6). Then, you will be operating in exploitation mode.	Rebind all DASD MANAGER PLUS packages and plans by using ASU*ssid*P (bind packages) and ASU*ssid*B (bind plans) (where *ssid* is the subsystem ID).
using catalog indirection and ALTER, CHANGE MANAGER, PATROL DB-Alter, or PATROL DB-Change Manager in toleration mode	1. Perform a Full installation of ALTER or CHANGE MANAGER 6.2E. Then, you will be operating in exploitation mode. 2. Reinstall catalog indirection.	1. Provided that the previous indirection still exists, remove the indirect copy or view in exploitation mode. 2. Provided that ALTER, CHANGE MANAGER, PATROL DB-Alter, or PATROL DB-Change Manager still exists in toleration mode, use the fallback procedures described for toleration mode to remove the product in exploitation mode. 3. Rebind all indirect packages and plans for the previous version by using *prdssid*Z (bind packages) and *prdssid*B (bind plans) (where *ssid* is the subsystem ID).
using catalog indirection and CATALOG MANAGER 6.1 or later	Reinstall catalog indirection.	1. Provided that the previous indirection still exists, remove the indirect copy or view in exploitation mode. 2. Provided that CATALOG MANAGER still exists in toleration mode, use the fallback procedures described for toleration mode to remove the product in exploitation mode. 3. Rebind all indirect packages and plans for the previous version by using *prdssid*Z (bind packages) (where *ssid* is the subsystem ID).

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To maintain BMC Software Administrative Products when you create a new DB2 Version 6 catalog, use the guidelines in Table 3-16.

Table 3-16 Creating a New DB2 Version 6 Catalog

If You Are	Then
using any of the Administrative Products	Perform a Full installation of the following Administrative Products: • ALTER or CHANGE MANAGER 6.2E (exploitation) • CATALOG MANAGER 6.2 (exploitation) • DASD MANAGER PLUS 6.1 (exploitation)
using catalog indirection	Install catalog indirection.

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Migrating from DB2 Version 4 to Version 5

To maintain BMC Software Administrative Products when you migrate to DB2 Version 5 or when you fall back to DB2 Version 4, use the guidelines in Table 3-17.

Table 3-17 Migrating DB2 Version 4 to Version 5 (Part 1 of 5)

If You Are	Then	To Fall Back Then
using ALTER or CHANGE MANAGER 5.3C or 5.4C installed on DB2 Version 4	1. Migrate the DB2 catalog. 2. If the Distributed Data Facility (DDF) is installed for CHANGE MANAGER, drop the current synonyms to the old communication database tables. Then, recreate the synonyms by using the same synonym names, but with the new catalog table names. For an example, refer to the ACMINIT5 member in the *HLQ*.JCL library. 3. Rebind all ALTER (ALU) or CHANGE MANAGER (ACM) packages and plans by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID). Then, you will be operating in toleration mode.	1. Check your synonyms to make sure that they point to the correct table names. 2. If the synonyms do not point to the correct names, drop the current synonyms. Then, recreate the synonyms by using the same synonym names, but with the correct table names. 3. Rebind all ALTER (ALU) or CHANGE MANAGER (ACM) packages and plans by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID).
	As an alternative, you can perform a Full installation of ALTER or CHANGE MANAGER 6.2D. Then, you will be operating in exploitation mode.	Provided that ALTER or CHANGE MANAGER still exists in toleration mode, use the fallback procedures described for toleration mode and remove the product in exploitation mode. Any data that you added while you were in exploitation mode will not be available in toleration mode.

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Table 3-17 Migrating DB2 Version 4 to Version 5 (Part 2 of 5)

If You Are	Then	To Fall Back Then
using ALTER or CHANGE MANAGER 6.1C or later installed on DB2 Version 4	1. Migrate the DB2 catalog. 2. If the Distributed Data Facility (DDF) is installed for CHANGE MANAGER, drop the current synonyms to the old communication database tables. Then, recreate the synonyms by using the same synonym names, but with the new catalog table names. For an example, refer to the ALUINIT5 or ACMINIT5 member in the *HLQ*.JCL library. 3. Rebind all ALTER (ALU) or CHANGE MANAGER (ACM) packages and plans by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID). Then, you will be operating in toleration mode.	1. Check your synonyms to make sure that they point to the correct table names. 2. If the synonyms do not point to the correct names, drop the current synonyms. Then, recreate the synonyms by using the same synonym names, but with the correct table names. 3. Rebind all ALTER (ALU) or CHANGE MANAGER (ACM) packages and plans by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID).
	As an alternative, you can perform a Full installation of ALTER or CHANGE MANAGER 6.2D. Then, you will be operating in exploitation mode.	Provided that ALTER or CHANGE MANAGER still exists in toleration mode, use the fallback procedures described for toleration mode and remove the product in exploitation mode. Any data that you added while you were in exploitation mode will not be available in toleration mode.
using CATALOG MANAGER 5.3 or 5.4	1. Migrate the DB2 catalog. 2. Modify the ACTDB25E worklist member in the *HLQ*.JCL library. 3. Execute the worklist using a modified copy of the $I40INST job that the INSTALL job dialog generated. 4. Rebind all CATALOG MANAGER packages and plans by using ACT*ssid*P (bind packages) and ACT*ssid*B (bind plans) (where *ssid* is the subsystem ID). Then, you will be operating in exploitation mode.	1. Check your synonyms to make sure that they point to the correct table names. 2. If the synonyms do not point to the correct names, drop the current synonyms. Then, recreate the synonyms by using the same synonym names, but with the correct table names. 3. Rebind all CATALOG MANAGER packages and plans by using ACT*ssid*P (bind packages) and ACT*ssid*B (bind plans) (where *ssid* is the subsystem ID).

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Table 3-17 Migrating DB2 Version 4 to Version 5 (Part 3 of 5)

If You Are	Then	To Fall Back Then
using CATALOG MANAGER 6.1 or later	1. Migrate the DB2 catalog. 2. Run *HLQ*.CNTL(UPGRD4#5). Then, you will be operating in exploitation mode.	1. Check your synonyms to make sure that they point to the correct table names. 2. If the synonyms do not point to the correct names, drop the current synonyms. Then, recreate the synonyms by using the same synonym names, but with the correct table names. 3. Rebind all CATALOG MANAGER packages and plans by using ACT*ssid*P (bind packages) and ACT*ssid*B (bind plans) (where *ssid* is the subsystem ID).
using DASD MANAGER PLUS 5.2.04	1. Migrate the DB2 catalog. 2. If the Distributed Data Facility (DDF) is installed, drop the current synonyms to the old communication database tables. Then, recreate the synonyms by using the same synonym names, but with the new catalog table names. For an example, refer to the ASUINIT5 member in the *HLQ*.JCL library. 3. Rebind all DASD MANAGER PLUS packages and plans by using ASU*ssid*P (bind packages) and ASU*ssid*B (bind plans) (where *ssid* is the subsystem ID). Then, you will be operating in toleration mode.	1. Check your synonyms to make sure that they point to the correct table names. 2. If the synonyms do not point to the correct names, drop the current synonyms. Then, recreate the synonyms by using the same synonym names, but with the correct table names. 3. Rebind all DASD MANAGER PLUS packages and plans by using ASU*ssid*P (bind packages) and ASU*ssid*B (bind plans) (where *ssid* is the subsystem ID).
using DASD MANAGER PLUS 5.3 or 5.4	1. Migrate the DB2 catalog. 2. Modify the ASUDB25E worklist member in the *HLQ*.JCL library. 3. Execute the worklist using a modified copy of the $I40INST job that the INSTALL job dialog generated. 4. Rebind all DASD MANAGER PLUS packages and plans by using ASU*ssid*P (bind packages) and ASU*ssid*B (bind plans) (where *ssid* is the subsystem ID). Then, you will be operating in exploitation mode.	1. Check your synonyms to make sure that they point to the correct table names. 2. If the synonyms do not point to the correct names, drop the current synonyms. Recreate the synonyms by using the same synonym names, but with the correct table names. 3. Rebind all DASD MANAGER PLUS packages and plans by using ASU*ssid*P (bind packages) and ASU*ssid*B (bind plans) (where *ssid* is the subsystem ID).

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Table 3-17 Migrating DB2 Version 4 to Version 5 (Part 4 of 5)

If You Are	Then	To Fall Back Then
using DASD MANAGER PLUS 6.1	1. Migrate the DB2 catalog. 2. Run *HLQ*.CNTL(UPGRD4#5). Then, you will be operating in exploitation mode.	1. Check your synonyms to make sure that they point to the correct table names. 2. If the synonyms do not point to the correct names, drop the current synonyms. Recreate the synonyms by using the same synonym names, but with the correct table names. 3. Rebind all DASD MANAGER PLUS packages and plans by using ASU*ssid*P (bind packages) and ASU*ssid*B (bind plans) (where *ssid* is the subsystem ID).
using PATROL DB-Alter or PATROL DB-Change Manager server 2.2.04 through 3.1.02, initially installed on a DB2 Version 4 subsystem	1. Migrate the DB2 catalog. 2. If the Distributed Data Facility (DDF) is installed, drop the current synonyms to the old communication database tables. Then, recreate the synonyms by using the same synonym names, but with the new catalog table names. For an example, refer to the ALUINIT5 or ACMINIT5 member in the *HLQ*.JCL library. 3. Rebind all PATROL DB-Alter (ALU) or PATROL DB-Change Manager (ACM) packages and plans by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID). Then, you will be operating in toleration mode.	1. Check your synonyms to make sure that they point to the correct table names. 2. If the synonyms do not point to the correct names, drop the current synonyms. Recreate the synonyms by using the same synonym names, but with the correct table names. 3. Rebind all PATROL DB-Alter (ALU) or PATROL DB-Change Manager (ACM) packages and plans by using *prdssid*P (bind packages) and *prdssid*B (bind plans) (where *prd* is the product code and *ssid* is the subsystem ID).
	As an alternative to toleration mode, you can perform a Full installation of ALTER or CHANGE MANAGER 6.2D. Then, you will be operating in exploitation mode.	Provided that PATROL DB-Alter or PATROL DB-Change Manager still exists in toleration mode, use the fallback procedures described for toleration mode to remove the products in exploitation mode. Any data that you added while you were in exploitation mode will not be available in toleration mode.

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Table 3-17 Migrating DB2 Version 4 to Version 5 (Part 5 of 5)

If You Are	Then	To Fall Back Then
using catalog indirection and ALTER, CHANGE MANAGER, PATROL DB-Alter, or PATROL DB-Change Manager in toleration mode	1. Perform a Full installation of ALTER or CHANGE MANAGER 6.2D. Then, you will be operating in exploitation mode. 2. Reinstall catalog indirection.	1. Provided that the previous indirection still exists, remove the indirect copy or view in exploitation mode. 2. Provided that ALTER, CHANGE MANAGER, PATROL DB-Alter, or PATROL DB-Change Manager still exists in toleration mode, use the fallback procedures described for toleration mode to remove the product in exploitation mode. 3. Rebind all indirect packages and plans for the previous version by using *prdssid*Z (bind packages) and *prdssid*B (bind plans) (where *ssid* is the subsystem ID).
using catalog indirection and CATALOG MANAGER	Reinstall catalog indirection.	1. Provided that the previous indirection still exists, remove the indirect copy or view in exploitation mode. 2. Rebind all indirect packages and plans for the previous version by using *prdssid*Z (bind packages) (where *ssid* is the subsystem ID).

To maintain BMC Software Administrative Products when you create a new DB2 Version 5 catalog, use the guidelines in Table 3-18.

Table 3-18 Creating a New DB2 Version 5 Catalog

If You Are	Then
using any of the Administrative Products	Perform a Full installation of the following Administrative Products: • ALTER or CHANGE MANAGER 6.2D • CATALOG MANAGER 6.2 • DASD MANAGER PLUS 6.1 Then, you will be operating in exploitation mode.
using catalog indirection	Install catalog indirection.

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Post-Installation Tasks

Once you have verified that an Administrative Product has been installed correctly, refer to Chapter 4, “Performing Post-Installation Tasks,” for information about how to perform post installation tasks for the BMC Software products that reside on the Administrative Products tape set.

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Chapter 4 Performing Post-Installation Tasks

This chapter presents the following topics:

Performance Considerations 4-2
Adding Products to the BMCDB2PR Panel 4-2
Performing the Post-Installation Tasks for Administrative Products 4-3
- Enabling the Product CLISTs. 4-4
- Compiling SLIBs 4-14
- Assembling the Modifications to the DOPTs. 4-16
- Binding the Packages and Plans for Shared Components 4-17
- Verifying the Product Authorization 4-18
- Invoking the BMCDB2 CLIST 4-19
- Verifying the Installation of the Administrative Products 4-20

Using Fast Path Navigation. 4-21
Performing the Post-Installation Tasks for the MVS Server. 4-22
- Configuring TCP/IP 4-23
- Configuring APPC SNA. 4-27
- Confirming the Host-Code Page for the MVS Server 4-43
- Enabling the Use of Secondary Authorization IDs 4-44
- Verifying the Installation of the MVS Server. 4-45

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Performance Considerations

DB2 Version 4 and later allows indexes on the catalog. To improve performance, BMC Software recommends that you create indexes on the following DB2 catalog tables:

- SYSIBM.SYSCOLAUTH
- SYSIBM.SYSDBRM
- SYSIBM.SYSFIELDS
- SYSIBM.SYSFOREIGNKEYS
- SYSIBM.SYSRELS
- SYSIBM.SYSSTMT
- SYSIBM.SYSSYNONYMS
- SYSIBM.SYSTABAUTH
- SYSIBM.SYSTABLES
- SYSIBM.SYSVIEWDEP

Depending on the functionality used in a product, you may be able to create several other indexes that improve the performance of the product. Refer to *HLQ*.CNTL (DCIDB2IX) for details on creating these indexes. You can implement the desired indexes by reading the comments in this member. For indexes used with catalog indirection, refer to *HLQ*.CNTL (DCIDB2ZX).

Adding Products to the BMCDB2PR Panel

The Tools Install System enables you to add products that are not included on the TIS or SAT tapes to the BMCDB2PR panel. The following BMC Software products can be added to the BMCDB2PR panel:

- ACTIVITY MONITOR for DB2 (DOM)
- APPTUNE™ for DB2 (ASQ)
- CHANGE ACCUMULATION PLUS (ACA)
- COORDINATED RECOVERY MANAGER (CRR)
- COPY PLUS for DB2 (ACP)
- EXTENDED BUFFER MANAGER (XBM)
- Log Master™ for DB2 (ALP)
- OPERTUNE® for DB2 (DDT)
- OPERTUNE for MQSeries (DDM)
- PACLOG™ for DB2 (ALM)
- RECOVERY MANAGER for DB2 (ARM)
- RECOVERY MANAGER for OS/390 (MRM)

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After you copy the UPDTBMC CLIST and the UPDTDB2 macro from the *HLQ*.INSTALL library to your TSO USERID CLIST library or a linklisted CLIST library, you can execute the CLIST by typing TSO UPDTBMC on the command line. You will need to know the location of the BMCDB2PR panel and the above product's CLIST, as well as the above product's code.

Performing the Post-Installation Tasks for Administrative Products

After you complete the installation procedure for the Administrative Products, you must perform the following tasks:

- Enable the product CLISTs.
- Compile SLIBs.
- Assemble the modifications to the default processing options (DOPTs).
- Bind the Administrative Products packages and plans.
- Verify the Product Authorization.
- Invoke the BMCDB2 CLIST.
- Verify the installation.

To perform post-installation tasks for the MVS Server for the Database Administration products, see "Performing the Post-Installation Tasks for the MVS Server" on page 4-22.

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Enabling the Product CLISTs

Summary: This section describes the steps that you must perform to enable the product CLISTs.

Step 1 Make the product CLISTs available for execution.

Administrative Products are shipped with CLISTs. From the Install System dialog, you were prompted to indicate whether to use the ALTLIB command to make these CLISTs available for execution. If you decided not to use the ALTLIB command, copy the CLISTs from the *HLQ*. CLIST library to a library in your SYSPROC concatenation, or add the *HLQ*.CLIST library to your SYSPROC concatenation.

BMC Software products that are installed with different high-level qualifiers (that is, products that are installed individually and that may reside in different libraries) can be accessed from a single BMC Software-supplied ISPF interface. The Administrative Products for DB2 require you to integrate their ISPF dialog into your ISPF system. The Install System generates a BMC Software-supplied ISPF interface based on the options and products that you specify during installation. The Install System then generates a CLIST (BMCDB2) and a panel (BMCDB2PR). This CLIST and panel are generated in the *HLQ*.JCL library.

If you want to invoke the BMCDB2 CLIST implicitly, copy the CLIST to a CLIST library that is normally allocated to your TSO session.

Step 2 Edit the BMCDB2 CLIST.

If you install the products individually using the same installation data set, the BMCDB2 CLIST and BMCDB2PR panel are generated using only the options for the last product that was installed. Therefore, you may not be able to access the previously installed product unless you manually edit the BMCDB2 CLIST. Use the following scenarios as examples for editing the BMCDB2 CLIST.

Note: If you are planning to execute multiple copies of the BMCDB2 CLIST, you may need to change the ISPF application ID that the CLIST allocates so that each SSID user profile is unique across all BMCDB2 CLISTs. Otherwise, changing user options in one SSID might also change the same user options for a different SSID. Refer to “Avoiding User Options Overlay” on page 3-15 for more information.

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If you have multiple versions of the products installed and the version and release numbers of the products on one subsystem are later than the version and release numbers of the products on another subsystem, use the CLIST for the later version and release of the products. For example, if you installed version 5.4 of the products on subsystem DBDA and you installed version 6.1 of the products on subsystem DBDB, and you want to use one CLIST, use the CLIST for the version 6.1 products on DBDB.

If you copy the BMCDB2 CLIST from the *HLQ*.JCL library to a CLIST library that is normally allocated to your TSO session, you should modify the **BMCDB2C** variable in the BMCDB2 CLIST. Set this variable to the library where the BMCDB2 CLIST was copied. Optionally, if you copy the BMCDB2PR, BMCDB2P2, and BMCDB2TB panels from the *HLQ*.JCL library to another library, you should modify the **BMCDB2P** variable in the BMCDB2 CLIST. Set this variable to the library where the panels were copied.

A control table appears at the bottom of the BMCDB2 CLIST, as shown in Figure 4-1. Refer to the comments in the BMCDB2 CLIST for the descriptions of the columns and for additional examples.

Note: The data in the control table, which begins with the identifier *DATA, is placed in specific positions, and every data row must have an asterisk in column 73. Comment lines contain an asterisk (*) in column 1. The data in the control table is column specific.

Figure 4-1 BMCDB2 CLIST Control Table

```
*DATA
*PROD SSID D/I DOPT     PLAN   APPL COLL_ID            NICKNAME
*----|----|-|--------|--------|----|------------------|----------------
 ASU  DBAP D ASUDOPD1 ASU611DC ASUA                                    *
*LIB  SSID Data Set Name
*----|----|------------------------------|
 EXIT DBAP 'SYS3.DBAP.DSNEXIT'                                        *
 LOAD DBAP 'SYS2.DB2V31M.DSNLOAD'                                     *
```

- To improve the performance of the invocation of the products from the BMCDB2 CLIST by placing a control table in a permanent ISPF table in the *HLQ*.TLIB data set, set the GENTABLE variable in the BMCDB2 CLIST to **Y**, as shown in Figure 4-2 on page 4-6.

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Figure 4-2 Setting the GENTABLE Variable in the BMCDB2 CLIST

```
SET BMCDB2T = &STR(BMC.DB2ADMN.D61.TLIB)  /* CONTROL TABLE DATASET      */
...
SET GENTABLE = Y    /* USE GENERATED PERMANENT TABLE (Y/N)              */
                    /* FOR CONTROL TABLE                                */
```

After you invoke the BMCDB2 CLIST, you must type GENERATE on the command line. Refer to the BMCDB2T variable in the BMCDB2 CLIST for the location of the generated ISPF table.

- To add the CHANGE MANAGER product to the table shown in Figure 4-1, which lists only the DASD MANAGER PLUS product, you must add the line shown in Figure 4-3 (where *vrm* is the version, release, and maintenance level) after the line for the ASU product:

Figure 4-3 Adding CHANGE MANAGER to the Control Table

```
*DATA
*PROD SSID D/I DOPT     PLAN   APPL COLL_ID            NICKNAME
*----|----|-|--------|--------|----|------------------|-----------------
 ACM  DBAP D ACMDOPD1 CMvrmCDF ACMA                                    *
```

- If CHANGE MANAGER was installed into a different set of libraries than DASD MANAGER PLUS, you must also add the line shown in Figure 4-4 (where *HLQ* is the high level qualifier(s) of the CHANGE MANAGER libraries) to the bottom of the table:

Figure 4-4 Specifying the Location of CHANGE MANAGER Libraries

```
*DATA
*PROD SSID D/I DOPT     PLAN   APPL COLL_ID            NICKNAME
*----|----|-|--------|--------|----|------------------|-----------------
 ACM  DBAP H HLQ                                                      *
```

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- To enable access to additional data-sharing members or to the group attach name, you must duplicate the table rows of the existing subsystem name for each member or group attach name, substituting the member or group attach name for the SSID column. The example in Figure 4-5 uses the group attach name GRP1.

Figure 4-5 Enabling Access to Additional Members

```
*DATA
*PROD SSID D/I DOPT     PLAN   APPL COLL_ID            NICKNAME
*----|----|-|--------|--------|----|------------------|------------------
 ASU  DBDB D ASUDOPD1 ASUvrmDC ASU5                                      *
 ACT  DBDB D ACTDOPD1 ACTvrmDM ACT5 ACTvrm_D_MAIN      DBDB              *
 ACM  DBDB D ACMDOPD1 CMvrmEDF ACM5                                     *
 PSS  DBDB D PSSvrmD1          PSS5                                     *
 EXIT DBDB 'SYS3.DBDB.DSNEXIT'                                          *
 LOAD DBDB 'SYS2.DB2V62M.DSNLOAD'                                       *
 HLQ  DBDB BMCADMN.Vvrm.D62                                             *
 VCAT DBDB DBDBCAT                                                      *
 DDF  DBDB DBDB                                                         *

 ASU  GRP1 D ASUDOPD1 ASUvrmDC ASUG                                     *
 ACT  GRP1 D ACTDOPD1 ACTvrmDM ACTG ACTvrm_D_MAIN      DBDB              *
 ACM  GRP1 D ACMDOPD1 CMvrmEDF ACMG                                     *
 PSS  GRP1 D PSS313D1          PSSG                                     *
 EXIT GRP1 'SYS3.DBDB.DSNEXIT'                                          *
 LOAD GRP1 'SYS2.DB2V62M.DSNLOAD'                                       *
 HLQ  GRP1 BMCADMN.Vvrm.D62                                             *
 VCAT GRP1 DBDBCAT                                                      *
 DDF  GRP1 DBDB
```

In the example in Figure 4-5, the VCAT keyword is used by CATALOG MANAGER and DASD MANAGER PLUS to indicate the name of a data set that starts with an identifier for the catalog name (DBDBCAT).

- The example in Figure 4-6 shows the data rows (servers) that can be listed in the CATALOG MANAGER CONNECT command panel. To change the servers that the CONNECT command lists, you can add, delete, or modify the data rows.

Figure 4-6 CATALOG MANAGER CONNECT Command Servers

```
*PROD SSID S SERVER NAME       SSID COLL_ID            NICKNAME
*----|----|-|-----------------|----|------------------|------------------
 ACT  AAAA S BBBB              BBBB BBB_COLCT          AAAABBBB          *
 ACT  AAAA S CCCC              CCCC CCCC_COLCT         AAAACCCC          *
```

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- If you used the Multiple subsystem ID (SSID) installation path, the CATALOG MANAGER server entries that were added by the Multiple SSID installation will be commented out in the BMCDB2 CLIST, as shown in Figure 4-7. Follow the instructions in the comments to enable the servers to be listed on the CONNECT command panel.

Figure 4-7 BMCDB2 CLIST for Multiple SSID Installation

```
* * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*            **INSERTED FROM MSSID INSTALL**
*  TO USE, MANUALLY UPDATE SERVER DATA ROWS BELOW
*  AND UNCOMMENT BY REMOVING COLUMN ONE ASTERISKS
*PROD SSID S SERVER NAME       SSID COLL_ID            NICKNAME
*----|----|-|-----------------|----|------------------|------------------
 ACT  DBBF S DBBA              DBBA LCTvrm_D_MAIN      DBBFDBBA         *
 ACT  DBBF S DBDB              DBDB LCTvrm_D_MAIN      DBBFDBDB         *
 ACT  DBBF S DBDA              DBDA LCTvrm_D_MAIN      DBBFDBDA         *
*ACT  DBBA S DBBA              DBBA LCTvrm_D_MAIN      DBBFDBBA         *
*ACT  DBBA S DBDB              DBDB LCTvrm_D_MAIN      DBBFDBDB         *
*ACT  DBBA S DBDA              DBDA LCTvrm_D_MAIN      DBBFDBDA         *
```

Note: Before you remove the comment, you will need to update the values for the Server Name, Server SSID, and the Server Nickname.

For additional examples, refer to the comment block that is located at the bottom of the BMCDB2 CLIST.

Customizing the Generated ISPF Interface for Catalog Indirection

The BMCDB2 CLIST and the BMCDB2PR panel may need slight customization before you run the Administrative Products with catalog indirection. Specifically, you should add **,Indirect** to the BMCDB2PR panel in *HLQ*.INSTALL.JCL, as shown below, to display the Indirect option in the BMCDB2PR panel.

```
+  DB2 Catalog Access . . . . . ._Z  +(Direct,Indirect)
```

You should also make the changes shown in Figure 4-8 to make the INDIRECT option valid.

Figure 4-8 BMCDB2PR Panel

```
ver (&catopt,nb,list,'DIRECT','INDIRECT') Uncomment this line.
/*************************************/
/*ver ($catopt,nb,list,'DIRECT') */       Comment out this line.
```

Member BMCDB2CI is generated to support catalog indirection. This member contains logic for the DOPTs module allocation for indirect access. When you use BMCDB2CI to update the BMCDB2 CLIST, consider the following:

- If you have MVS/ESA and TSO/E 2.1 or later, the Install System automatically updates the BMCDB2 CLIST with BMCDB2CI. The Install System searches both the JCL output file and the installation file to apply the updates wherever a copy of BMCDB2 is found. The Install System prompts you for the location of the BMCDB2 CLIST.

- If you do not have MVS/ESA and TSO/E 2.1 or later, follow the directions in BMCDB2CI for updating the BMCDB2 CLIST. If you install CATALOG MANAGER, follow the instructions for modification of the CATALOG MANAGER plan name.

Because the BMCDB2 CLIST uses the ISPF LIBDEF facility to allocate all necessary ISPF data sets, you may not need to modify your TSO logon procedure.

Step 3 Enable BMCDB2 CLIST to use different libraries for an SSID.

If your installation has more than one version of DB2, the Administrative Products must have separate libraries for each version. Use the following scenarios as examples for editing the BMCDB2 CLIST.

- In this scenario, CHANGE MANAGER is installed on SSID DB31. The product libraries have a high-level qualifier of `BMC.DB31.*`. During the installation, JCL and the BMCDB2 CLIST are generated into `BMC.DB31.JCL`. The table in Figure 4-9 is added to the bottom of the BMCDB2 CLIST.

Figure 4-9 Adding CHANGE MANAGER to Subsystem DB31

```
*DATA
*PROD SSID D/I DOPT     PLAN   APPL COLL_ID            NICKNAME
*----|----|-|--------|--------|----|------------------|-----------------
 ACM  DB31 D ACMDOPD1 CMvrmBDF ACMA                                    *
*LIB  SSID Data Set Name
*----|----|------------------------------|
EXIT DB31 'SYS3.DBAP.DSNEXIT'                                         *
LOAD DB31 'SYS2.DB2V31M.DSNLOAD'                                      *
```

- In this scenario, CHANGE MANAGER is installed on SSID DB41. The product libraries have a high level qualifier of `BMC.DB41.*`. During the installation, JCL and the BMCDB2 CLIST are generated into `BMC.DB41.JCL`. The table shown in Figure 4-10 is added to the bottom of the BMCDB2 CLIST.

Figure 4-10 Adding CHANGE MANAGER to Subsystem DB41

```
*DATA
*PROD SSID D/I DOPT     PLAN   APPL COLL_ID            NICKNAME
*----|----|-|--------|--------|----|------------------|-----------------
 ACM  DB41 D ACMDOPD1 CMvrmCDF ACMB                                    *
*LIB  SSID Data Set Name
*----|----|------------------------------|
EXIT DB41 'SYS3.DB41.DSNEXIT'                                         *
LOAD DB41 'SYS2.DB2V41M.DSNLOAD'                                      *
```

- If the BMCDB2 CLIST in `BMC.DB31.JCL` is used to invoke CHANGE MANAGER for both SSIDs, you must add the lines in Figure 4-11 to the control table.

Figure 4-11 Running DB41 Administrative Products from the DB31 BMCDB2 CLIST

```
*DATA
*PROD SSID D/I DOPT     PLAN   APPL COLL_ID            NICKNAME
*----|----|-|--------|--------|----|------------------|-----------------
 ACM  DB41 D ACMDOPD1 CMvrmCDF ACMB                                    *
*LIB  SSID Data Set Name
*----|----|------------------------------|
 EXIT DB41 'SYS3.DB41.DSNEXIT'                                        *
 LOAD DB41 'SYS2.DB2V41M.DSNLOAD'                                     *
 HLQ  DB41 BMC.DB41                                                   *
```

The HLQ in Figure 4-11 tells the BMCDB2 CLIST to use `BMC.DB41` as the high-level qualifier for products that are installed on SSID DB41. Figure 4-12 on page 4-11 shows the updated table at the bottom of `BMC.DB31.JCL(BMCDB2)`.

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Figure 4-12 Updated BMCDB2 CLIST

```
*DATA
*PROD SSID D/I DOPT     PLAN   APPL COLL_ID            NICK NAME
*----|----|-|--------|--------|----|------------------|----------------
 ACM  DB31 D ACMDOPD1 CMvrmBDF ACMA                                    *
 ACM  DB41 D ACMDOPD1 CMvrmCDF ACMB                                    *
*LIB  SSID Data Set Name
*----|----|------------------------------|
 EXIT DB31 'SYS3.DBAP.DSNEXIT'                                         *
 LOAD DB31 'SYS2.DB2V31M.DSNLOAD'                                      *
 EXIT DB41 'SYS3.DB41.DSNEXIT'                                         *
 LOAD DB41 'SYS2.DB2V41M.DSNLOAD'                                      *
 HLQ  DB41 BMC.DB41                                                    *
```

After you complete your changes, end the edit session.

Step 4 Customize the BMCDB2 CLIST for CATALOG MANAGER.

Catalog Browser is a subset of CATALOG MANAGER functionality that provides access to the BMC Software UTILITY MANAGER for DB2 product for users who do not have a CATALOG MANAGER license. UTILITY MANAGER supports utility processing for the BMC Software REORG PLUS for DB2 and the BMC Software COPY PLUS for DB2 products, and requires the installation of these products.

If you install UTILITY MANAGER with CATALOG MANAGER, and you choose not to apply a password for CATALOG MANAGER when you perform the installation, you will receive the functionality of the BMC Software Catalog Browser interface only.

To obtain the full functionality of CATALOG MANAGER, you will need to perform the following steps:

1. Apply a password for CATALOG MANAGER.

2. Edit the call to ACTEMAIN in your BMCDB2 CLIST, and change the M=B parameter to M=BC. The M parameter determines the password that is checked and the menu that is displayed.

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You can optionally cause CATALOG MANAGER to display a custom initial entry panel by adding one or both of the following:

- **Catalog Manager Profile Name** is a 1-18 character name for a set of common custom features for a CATALOG MANAGER Session. The profile name is passed to the product via the calling CLIST (BMCDB2). Upon product entry, CATALOG MANAGER reads the profile, and brings up the primary menu, command table, and initial list filtering as defined for the session profile. See the *CATALOG MANAGER for DB2 Reference Manual* for information about how to create a session profile.

  The profile name is passed as a parameter from the invoking CLIST to the CATALOG MANAGER product module ACTEMAIN. The syntax for this name is `PR = profile-name`.

- **Catalog Manager Initial Command** is a 1-48 character command that is passed to the product from the invoking CLIST (BMCDB2). This command causes the product's initial entry panel to vary, depending on which command is passed (for example, `DB M%` causes CATALOG MANAGER to first display a list of all the databases that start with the letter M).

  The initial command is passed as a parameter from the invoking CLIST to the CATALOG MANAGER product module ACTEMAIN. The syntax for this command is `C = initial-command`.

To add the Profile Name, the Initial Command, or both, you must edit the invoking CLIST. To do so, enter the CLIST and find the lines shown in Figure 4-13.

Figure 4-13 Adding the Profile Name or the Initial Command

```
WHEN(ACTEMAIN) DO   /* CATALOG MANAGER
  SET BMCFPCNT= 10100
  IF (&ACCESS = INDIRECT) THEN +
     SET CIACCESS = YES
  SET APPLID  = &ACTAPPL
  SET PARM    = &STR(S=&SSID,O=&ACTDOPT,D=&ASUDOPTD,+
                     M=BC,I=&CIACCESS,A=&ACMDOPT,+
                     DB2CAT=&DB2VCAT)
```

Add the following lines immediately after the preceding code:

```
SET PARM = &STR(&PARM,PR=PROGRAMMERS)
SET PARM = &STR(&PARM,C=DB M%)
```

The example that is shown causes CATALOG MANAGER to invoke the session profile called PROGRAMMERS. The initial entry screen will display a list of databases (DB), starting with the letter M.

Step 5 Enable the BMCMSG CLIST.

The Install System generates BMCMSG, the BMC Online Message processor. BMCMSG is a CLIST that displays information about messages that BMC Software products issue. The information includes an explanation of each message and the required user response. The BMCMSG CLIST is copied to the product CLIST library during installation. This section describes the step that you should perform to enable the processor from anywhere in TSO.

To enable the CLIST from TSO without having invoked an Administrative Product, copy the BMCMSG CLIST from the *HLQ*.INSTALL library to a library in the SYSPROC concatenation. If you do not, you will not have access to the CLIST unless you explicitly invoke it.

Note: Make sure that the current copy of the BMCMSG CLIST is in the same library as your other CLISTs.

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Compiling SLIBs

Summary: The Administrative Products share a common component called JCL Generation. This component generates the JCL that is needed to execute all the batch functions that use ISPF file tailoring. You may need to change members of the BMC Software product skeleton library (SLIB) to generate environment-specific JCL. This section describes the steps you must perform to edit, test, and compile the SLIB.

Step 1 Edit the appropriate SLIB members in *HLQ*.SLIB to change the way the JCL is generated.

Note: Any customizations that you have made to the SLIB members for a previous release will not be included in your current installation.

Step 2 Use JCLGEN to test the changes to the SLIB. For more information, refer to the *ALTER and CHANGE MANAGER for DB2 User Guide*, the *CATALOG MANAGER for DB2 User Guide*, and the *DASD MANAGER PLUS for DB2 User Guide*.

Step 3 Compile the SLIB members that you edited. For more information, refer to the *ALTER and CHANGE MANAGER for DB2 User Guide*, the *CATALOG MANAGER for DB2 User Guide*, and the *DASD MANAGER PLUS for DB2 User Guide*. For a sample compile JCL, refer to the *HLQ*.CNTL member AJXCOMPS.

Generating JCL Region Statements

The EXEC REGION parameter is set by default to REGION=0M in the AJX#USRV member that resides in the SLIB. If you do not change the IBM-supplied default limits in the IEALIMIT or IEFUSI exit routine modules, this parameter requests that the job step get all of the available storage above and below the 16 MB line.

If the IBM defaults have been changed, you should also change the REGION=0M parameter in the AJX#USRV member by finding the variable *REGION* and changing 0M. After you edit the member, compile it.

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Generating JCL for JES3 Environments

Users encounter a problem on systems using JES3 when the users attempt to close a data set through a subtask other than the subtask that opened the data set. This action can result in a 1FB ABEND. You can circumvent this problem by uncommenting the AJXJJES3=Y statement in the AJX#USRV member that resides in the SLIB. After you edit the member, compile it.

Generating JCL for Generation Data Groups

Refer to the comments in the SLIB member AJX#DSNS for GDG examples of making global changes. After you edit the member, compile it.

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Assembling the Modifications to the DOPTs

Summary: You can specify generation data groups (GDGs) by adding the &&GDG symbolic variable to the SYSCOPY and SYSRECV DOPTs parameters. As a result, the data set names are resolved using the symbolic variables, and include the GDG.

Step 1 In the product's DOPTs module, specify the symbolic **(&&GDG)** at the end of the DOPTs listed in Table 4-1.

Table 4-1 SYSCOPY and SYSRECV DOPTs

Product	DOPTs
CATALOG MANAGER	UCDSP UVDSP
ALTER CHANGE MANAGER DASD MANAGER PLUS	SYSCPREF RECVPREF

For example, type

'&&PREFIX..&&SSID..&&OBNOD(&&GDG)'.

Step 2 Use the installation job $*xnn*DOPT to assemble these changes to the DOPTs.

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Binding the Packages and Plans for Shared Components

The Install System is designed to allow you to install more than one Administrative Product simultaneously. However, you can install Administrative Products at different times. If you install the products at different times and any of the products share the same APF-authorized load library, you need to bind the products for the shared JCL Generation and Execution Monitor components. To bind the products, complete the steps in “Upgrading Shared Components” on page 3-4.

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Verifying the Product Authorization

Summary: All BMC Software products require Product Authorization before you can use them. This section describes how you can authorize your products.

You can enter your BMC Software Authorization passwords when you install the Administrative Products. If you are a licensed user and have already received and entered the permanent BMC Software Authorization passwords, ensure that the appropriate authorization modules are saved and copied to the new load library after you execute the Full or Maintenance installation. The authorization modules are created when the password is added.

Alternatively, you can use the BMC Software Product Authorization utility to apply passwords and to change your CPU configuration. To use the Product Authorization utility, refer to Appendix A, “BMC Software Product Authorization”.

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Invoking the BMCDB2 CLIST

Summary: This section describes the steps that you must complete to invoke the CLIST.

Step 1 Invoke the BMCDB2 CLIST by using one of the following:

- If you specify your high-level qualifier with JCL as the low-level node, invoke BMCDB2 directly from your output JCL data set in the ISPF command shell with the following command:

  ```
  ex 'HLQ.JCL(BMCDB2)'
  ```

- If the BMCDB2 CLIST is copied to a CLIST library that is normally allocated to your TSO session, invoke BMCDB2 implicitly with

  ```
  %BMCDB2
  ```

Step 2 If the BMCDB2 CLIST supports multiple SSIDs, in the BMCDB2PR panel type **?** in the DB2 SSID field. On the BMCDB2P2 panel, type **S** to select an SSID from the list of available SSIDs. The SSID you selected appears in the DB2 SSID field of the BMCDB2PR panel.

Step 3 If you edited your BMCDB2 CLIST to use a generated permanent ISPF table for the control table or if you modified the control table that was previously generated, type **GENERATE** on the command line.

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Verifying the Installation of the Administrative Products

Summary: This section describes the steps that you must complete to verify that the Administrative Products that have an ISPF interface have been installed correctly.

Step 1 Invoke the BMCDB2 CLIST. Verify that all the products appear on the BMCDB2PR panel that is displayed.

Step 2 Type **CONTAB** on the command line. On the BMCDB2TB panel, verify that the correct partitioned data set (PDS) and member name are displayed in the library in which the BMCDB2 CLIST is located. If they are not, set the **BMCDB2C** variable in the BMCDB2 CLIST to the correct library. Exit the **CONTAB** panel.

Step 3 Type **TSO BMCMSG BMCnnnnn** on the command line, where *nnnnn* is a valid message number (for example, BMC45680). Verify that a message is displayed. Press **F3** to exit the BMCMSG CLIST.

Step 4 Select one of the products that you installed.

Step 5 At the main menu for the Administrative Products, type **ENVI** on the command line.

Note: For DASD MANAGER PLUS, select the environment option.

Step 6 Review the environment panel to verify the displayed information. Exit the **ENVI** panel.

Step 7 Repeat Step 4 through Step 6 for each product that you installed.

Note: If you are installing CATALOG MANAGER and are using the Distributed Data Facility (DDF), enter **CONNECT** on the command line (from CATALOG MANAGER). The CATALOG MANAGER Connect panel appears. Then, verify connections or attachments to other DB2 subsystems.

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Using Fast Path Navigation

For Administrative Products, the Install System provides Fast Path Navigation, which enables you to switch from one product to another without leaving the current product.

To initiate Fast Path Navigation, enter the name of the product that you want to switch to on the **Command** line of the current product. Refer to Table 4-2 for a list of the products and commands.

Table 4-2 Fast Path Navigation Commands

Product	Command
ALTER	BMCALTER
CATALOG MANAGER	BMCCAT
CHANGE MANAGER	BMCCHG
DASD MANAGER PLUS	BMCDASD

For example, if you are currently using DASD MANAGER PLUS and want to view an object description in CATALOG MANAGER, enter **BMCCAT** on the DASD MANAGER PLUS **Command** line. When you initiate Fast Path Navigation, the main menu for the requested product is displayed. In this case, the DASD MANAGER PLUS session is temporarily suspended and then resumed when you exit CATALOG MANAGER.

To use Fast Path Navigation, you must install the products by using the Install System and use the BMCDB2 CLIST during product invocation. The distributed CLISTs BMCADMF1 and BMCADMF2 must be in a data set that is in either the ALTLIB list of the BMCDB2 CLIST or your SYSPROC concatenation. Also, the product to which you are switching must be installed and reside in the same set of libraries as the product from which you are switching.

Note: You cannot use Fast Path Navigation to access a product that is currently suspended. For example, if you switch from ALTER to DASD MANAGER PLUS, you cannot use fast path to return to ALTER because it is currently suspended. Instead, you have to exit the DASD MANAGER PLUS session to resume the ALTER session.

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Performing the Post-Installation Tasks for the MVS Server

After you install the MVS Server for the Database Administration products, you must perform the following tasks:

- Configure your communication protocol.
- Confirm the host-code page for the server.
- Enable the use of secondary authorization IDs for each client.
- Verify the installation.

If you chose TCP/IP as your protocol, refer to the section “Configuring TCP/IP” on page 4-23. If you chose APPC SNA, refer to “Configuring APPC SNA” on page 4-27.

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Configuring TCP/IP

Summary: This section describes the steps that you must perform if you select TCP/IP as your communication protocol for the MVS Server.

Step 1 Edit the INI#ACV file.

The PATROLDB member is the started task that enables the clients to communicate with DB2. PATROLDB uses the initialization file INI#ACV to establish the TCP/IP address (port address), as well as the default options (DOPTs) that the MVS Server uses.

After you complete the installation, the members INI#ACV and PATROLDB are placed in the *HLQ*.CNTL data set. The INI#ACV member contains the TCP/IP port number that the MVS Server monitors. If an incorrect port number is specified during installation, you can edit it manually in INI#ACV. You do not need to register your port in the TCP/IP profile data set.

Figure 4-14 on page 4-24 shows an example of an INI#ACV member.

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Figure 4-14 Example of INI#ACV Member

```
##Server INI file used by ALTER for DB2
sbiDBS.CP =CP037
sbiDBS.MaxAgents =16
sbiDBS.MAXADDR=16
sbiDBS.AutoStart =1
sbiDBS.Server1 =MVSTCP

MVSDB2.AccessDriver =SBIDB2M
MVSSPD.AccessDriver =SBISPDM
MVSJZS.AccessDriver =SBIJZSM
MVSFILE.AccessDriver =ACVFILM

MVSTCP.ServerEnabled =1
MVSTCP.OperatingMode =SERVER
MVSTCP.LocalMethod =MultiplexSVP
MVSTCP.AccessDriver =SBIRTMM
MVSTCP.ProtocolDriver =SBITCPM
MVSTCP.lanadapter =0
MVSTCP.client =
MVSTCP.server =
MVSTCP.protocol =tcp

##TCPIP Port address assigned to Server
MVSTCP.service =1313
##Packet size must be at least 8192
MVSTCP.packetsize =8192
MVSTCP.receivetimeout =0
MVSTCP.transmitttimeout =0
MVSTCP.SASDebug =0
MVSTCP.HPNS =1

JSI.JSISSID =JSI1
JSI.JESSID =JES2
JSI.JSIDDL =00
JSI.SPOOLBYOWNER =0

FOREGROUND.STARTEDPROC=BMCAKMFG

SCRIPT.FILE ='BMCADMN.V621.D62.SCRIPT'

##SECTION DOPTS "DOPTS BY SSID:NICKNAME" ST_1
DOPTS.DB25_DIRECT =BMCADMN.V621.D62.LOAD(ALUDOPD1)
```

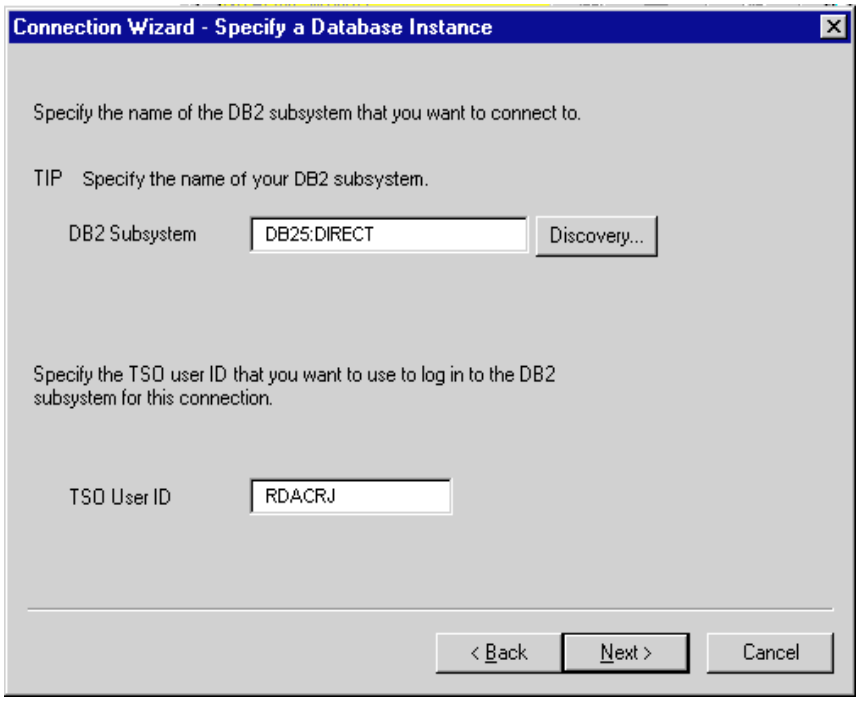
At the bottom of the INI#ACV member is the DOPTs file location that the product uses to connect to DB2. The SSID field that is stored in the DOPTs module is the SSID to which the ALTER and CHANGE MANAGER products' clients connect. This DOPTs module is referenced by a nickname that you specify during the configuration of the client.

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The DB2 subsystem name that you specify during the client configuration must be the same as the nickname specified in the INI#ACV file. Whereas you specify the name of the subsystem with an underscore (_) in the INI#ACV file, you must enter the name in the Connection Wizard screen during the client configuration with a colon (:).

In the example in Figure 4-14 on page 4-24, the DOPTs nickname is DB25_DIRECT, and it references `BMCADMN.V621.D62.LOAD(ALUDOPD1)`. The source for the DOPTs module is found in `HLQ.CNTL(member)`. In the example, this is member ALUDOPD1. Figure 4-15 illustrates that the DOPTs nickname is entered as DB25:DIRECT, replacing the underscore (_) with a colon (:), when the client is installed on the user's PC.

Figure 4-15 Connection Wizard Screen


Connection Wizard - Specify a Database Instance
Specify the name of the DB2 subsystem that you want to connect to.
TIP Specify the name of your DB2 subsystem.
DB2 Subsystem
DB25:DIRECT
Discovery...
Specify the TSO user ID that you want to use to log in to the DB2 subsystem for this connection.
TSO User ID
RDACRJ
< Back
Next >
Cancel

Step 2 Configure OS/390.

- If you are using OS/390 release 2.5 or later and IBM TCP/IP version 3.4 or later, the owner of the started procedure (that is, the user ID that is accessing TCP/IP) must define an OMVS segment in Resource Access Control Facility (RACF) or in another security package to operate the MVS Server.

  Refer to the IBM *OS/390 eNetwork Communications Server: IP Planning and Migration Guide* for more information.

- If you are using OS/390 release 2.4 or earlier, set the MVSTCP.HPNS variable, found in the Server .INI file, to MVSTCP.HPNS=0. A zero value indicates that the TCP/IP API will not be defined as High-Performance Native Sockets (HPNS).

Step 3 Activate the MVS Server.

The PATROLDB member, shown in Figure 4-16, is the started task that enables the MVS Server to communicate with DB2.

Figure 4-16 ISPF Edit Panel

```
EDIT ---- BMCADMN.V621.D62.CNTL(PATROLDB) - 01.00 ------------ COLUMNS 001 072
COMMAND ===>                                                  SCROLL ===> CSR
****** **************************** TOP OF DATA ****************************
000001 //PATROLDB  PROC OUT=X
000002 //*
000003 //PATROLDB EXEC PGM=XAMSERV,PARM='1 0 0 0 MVSDB2 1',REGION=0M
000004 //STEPLIB  DD DISP=SHR,DSN=BMCADMN.V621.D62.LOAD
000005 //         DD DISP=SHR,DSN='SYS2.DB2V61M.DSNLOAD'
000006 //JSIDLL   DD DISP=SHR,DSN=BMCADMN.V621.D62.LOAD
000007 //MSGKSDS  DD DISP=SHR,DSN=BMCADMN.V621.D62.ACVMSGS
000008 //BMCIPROF DD DISP=SHR,DSN=BMCADMN.V621.D62.CNTL(INI#ACV)
000009 //JZSJES   DD SYSOUT=(Q,INTRDR)      ==  INTERNAL READER
000010 //SYSTCPD  DD DISP=SHR,DSN='TCPIP.TCPIP.DATA'
000011 //SBISCRC  DD DUMMY
000012 //SYSUDUMP DD SYSOUT=&OUT
000013 //SYSPRINT DD SYSOUT=&OUT            ==  DEBUG MSGS
000014 //STDOUT   DD SYSOUT=&OUT            ==  DEBUG MSGS
000015 //SYSTERM  DD SYSOUT=&OUT            ==  ERROR MSGS
000016 //STDERR   DD SYSOUT=&OUT            ==  ERROR MSGS
000017 //SYSOUT   DD SYSOUT=&OUT            ==  ERROR MSGS
000018 //*
****** *************************** BOTTOM OF DATA ***************************
```

3.A In the steplib of the PATROLDB started task, specify the load libraries that you referenced in the INI#ACV file.

Note: The steplib must point to only APF-authorized loadlibs.

3.B Copy PATROLDB into a system proclib data set, where it can be started as a started task. For more information, refer to the IBM *OS/390 eNetwork Communications Server: IP Planning and Migration Guide*.

3.C Define the proclib name to RACF as a started task.

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3.D Start the PATROLDB member to activate the MVS Server. For a list of available MVS console modify and stop commands, see Table 4-3 on page 4-29.

Step 4 Enable foreground processing.

To enable the option of foreground processing when you run the client, follow these steps:

4.A Copy **BMCAKMFG** into a system proclib data set, where it can be started as a started task.

4.B Define the proclib name to RACF as a started task.

Note: The steplib must point to only APF-authorized loadlibs.

Once foreground processing is enabled, you will be prompted to perform a particular function in either foreground mode or batch mode. When you indicate foreground mode, the server starts the **BMCAKMFG** task (or the task that is specified in the FOREGROUND.STARTEDPROC parameter in the INI#ACV member), and the foreground function is performed.

Step 5 Install the client on the user's PC.

For information on installing the client, refer to Chapter 9, "Installing the Client for ALTER and CHANGE MANAGER."

Where to Go from Here

After you configure the TCP/IP communication protocol, you verify the setting for your host-code page. For more information, see "Confirming the Host-Code Page for the MVS Server" on page 4-43.

Configuring APPC SNA

During the installation of the MVS Server, if you chose a communication protocol of APPC SNA instead of TCP/IP, you need to follow the instructions in this section.

Configuring APPC connectivity for use with the MVS Server is a three-part process that involves setting up the MVS Server, setting up the Microsoft SNA Gateway Server, and setting up the client.

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Setting Up the MVS Server

Summary: The first task in the APPC configuration process requires you to set up the MVS Server. The MVS Server uses the APPC/MVS Server Facilities introduced in MVS/ESA SP 4.3.0. In this section, the term *APPC/MVS* is used to represent the APPC/MVS Server Facility, and the term *server* refers to the MVS Server.

Before You Begin

The server selects inbound conversations on the basis of the named application, *TP name*, its location in the network, and the *LU name*.

- The TP name is a 1- to 64-character name describing the server's address space. Inbound requests are directed to this location. The TP name may be the started task name or job name of the server's address space.

- The logical unit (LU) name is a unique name defined to the VTAM network for the server application.

After APPC/MVS receives a client request for a conversation, APPC/MVS checks whether any address space has registered to serve the request. If so, APPC/MVS assigns the request to an allocation queue. The server can then select the request from the queue for processing. When the server selects the request from the queue, it receives the conversation ID, and a conversation with the client begins.

Because APPC/MVS requires the server to register and unregister for services, the server must be shut down in an orderly way to be unregistered as an APPC/MVS Server. Cancelling the server is not recommended. You can use an MVS console STOP command (P) to stop the server. Alternatively, you can use an MVS modify STOP command (F) to shutdown the server task in an orderly fashion. For a list of available MVS console commands, see Table 4-3 on page 4-29.

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Table 4-3 MVS Commands

MVS Commands	Description
S *jobname*	starts the job or task named by the jobname parameter
P *jobname*	stops the job or started task named by the jobname parameter
F *jobname*, DRAIN	toggles the DRAIN status flag When DRAIN is enabled, new clients are prevented from attaching to the server and the server automatically shuts down when all active tasks are complete.
F *jobname*, LIST	lists active tasks that are running in the server
F *jobname*, STATUS	displays the current status information for the server
F *jobname*, STOP	stops the job or started task named by the jobname parameter
F *jobname*, TERM *xxx*	terminates the task where *xxx* is the key The key is found by issuing the LIST command.
F *jobname*, TRACE	toggles the Global Trace variable
F *jobname*, TRCAGENT	toggles the Trace Agent variable
F *jobname*, TRCSERV	toggles the Trace Server variable

Note: For detailed information about establishing a server with APPC/MVS, refer to the *MVS/ESA Planning: APPC Management Reference Manual*.

To Set Up the MVS Server

Step 1 Define an APPC logon mode in the VTAM logon mode table.

A *logon mode* is a set of parameters that determine the characteristics of the communication session between the client and the server. The person who is responsible for setting up the MVS system's network definitions defines the logon mode. Typically, this person is familiar with making the network definitions available to VTAM.

An installation can create several logon mode tables that contain varying communication characteristics for the MVS VTAM network. The logon mode tables are assembled and link edited to `SYS1.VTAMLIB`. All the modes that the server LU uses should be contained in the table and specified in the server's LU APPL definition statement.

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Figure 4-17 on page 4-31 shows a sample logon mode table that contains three logon modes, including the required SNASVCMG entry. In the sample LU definition, the specified logon mode table was assembled and linked as ACVAPPC.

Note: This example is available in `SYS1.SAMPLIB` in member ATBLMODE. It can be assembled and linked using member ATBLJOB. The server can use the sample logon mode table that IBM supplies. Alternatively, you can use an existing logon mode table containing the entry that the server uses, APPCPCLM.

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Figure 4-17 Sample Logon Mode Definition

```
LOGMODES MODETAB
         EJECT
*********************************************************************
TITLE 'SNASVCMG'
*********************************************************************
*LOGMODE TABLE ENTRY FOR RESOURCES CAPABLE OF ACTING
*AS LU 6.2 DEVICES
*REQUIRED FOR LU MANAGEMENT
*********************************************************************
SNASVCMG MODEENT LOGMODE=SNASVCMG,FMPROF=X'13',TSPROF=X'07',        *
               PRIPROT=X'B0',SECPROT=X'B0',COMPROT=X'D0B1',         *
               RUSIZES=X'8585',ENCR=B'0000',                        *
               PSERVIC=X'060200000000000000000300'
*********************************************************************
TITLE 'APPCPCLM'
*********************************************************************
*LOGMODE TABLE ENTRY FOR RESOURCES CAPABLE OF ACTING
*AS LU 6.2 DEVICES
*FOR PC TARGET
*IN THIS EXAMPLE THE DEFAULT RU SIZE FOR OS/2 (1024) IS USED
*********************************************************************
APPCPCLM MODEENT LOGMODE=APPCPCLM,                                   *
               RUSIZES=X'8787',                                      *
               SRCVPAC=X'00',                                        *
               SSNDPAC=X'01'
*********************************************************************
TITLE 'APPCHOST'
*********************************************************************
*LOGMODE TABLE ENTRY FOR RESOURCES CAPABLE OF ACTING
*AS LU 6.2 DEVICES
*FOR HOST TARGET
*IN THIS EXAMPLE RU SIZE OF 4096 IS USED
*********************************************************************
APPCHOST MODEENT LOGMODE=APPCHOST,                                   *
               RUSIZES=X'8989',                                      *
               SRCVPAC=X'00',                                        *
               SSNDPAC=X'01'
         MODEEND
END
```

Step 2 Define the local LU to VTAM.

A VTAM application (APPL) definition statement in `SYS1.VTAMLST` defines an APPC/MVS local LU to VTAM. This definition must be made by the person who is responsible for implementing VTAM network changes for the MVS system.

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The APPL statement

- names the local LU
- identifies the local LU as a type 6.2
- sets the default parameters for the LU
- specifies the name of the logon mode table that contains the logon modes that the LU uses

To ensure the use of subtasking, verify the VTAM LU definition (`DSESLM=10`). The number 10 represents the number 16 in hexadecimal numbering.

Figure 4-18 shows a sample local LU definition to VTAM.

Figure 4-18 Sample Local LU Definition for VTAM

```
ACVLU01 APPL    ACBNAME=ACVLU01,
                APPC=YES,C
                AUTOSES=0,C
                DDRAINL=NALLOW,C
                DLOGMOD=APPCPCLM,C
                DMINWNL=5,C
                DMINWNR=5,C
                DRESPL=NALLOW,C
                DSESLIM=10,C
                LMDENT=19,C
                MODETAB=ACVAPPC,C
                PARSESS=YES,C
                SECACPT=CONV,C
                SRBEXIT=YES,C
                VPACING=1
```

Note: A sample local LU definition exists in member APPLACV1 of the *HLQ*.CNTL data set. You must make this LU active to VTAM before you add the LU to APPC/MVS.

Step 3 Define the local LU to APPC/MVS.

To define a local LU as a server to APPC/MVS, update the APPCPM*xx* configuration member in `SYS1.PARMLIB` by adding an `LUADD` statement for the LU of the server. The configuration member names the LUs and respective administrative VSAM KSDS. The person who is responsible for updating the MVS system or VTAM network definition files must make this update.

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The LU that is defined for the server does not have a TP Profile data set, nor does it require the use of a site information table. However, a reference to the system-level TP Profile data set that accesses only the database token from that TP Profile data set is required. Thus, an entry for the server is not required in the specified TP profile data set, but a reference to the system level TP Profile data set is needed as part of the **LUADD** definition statement.

The LU application should already be defined and active to VTAM. The LU name that is used in the VTAM application definition must match the ACBNAME operand that is used in the **LUADD** statement. Once defined, the APPC address space must be started with the appropriate parameters to include the configuration file with the **LUADD** statement for the server.

Figure 4-19 shows a sample **LUADD** statement for defining the local LU to APPC/MVS. The example can be added to an existing APPCPM*xx* configuration member or used in a new configuration member. Then the example can be dynamically added to the APPC address space using the SET APPC=*xx* MVS command.

Note: The *HLQ*.CNTL data set contains a sample APPCPM*xx* member.

Figure 4-19 Sample Local LU Definition for APPC/MVS

```
LUADD  ACBNAME(ACVLU01)
       NOSCHED
       TPDATA(SYS1.APPCTP)
       TPLEVEL(SYSTEM)
```

Step 4 Provide APPC parameters to the server.

The server requires several parameters that have been defined to APPC/MVS and VTAM. The values of these parameters are described to the server through an initialization (INI) file that is specified by the BMCIPROF DD statement in the server JCL. The parameters in this file are initialized during the installation of the server. If changes to the parameters are required, you can modify them by manually editing the INI file.

Figure 4-20 on page 4-34 shows a sample MVS Server configuration file.

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Figure 4-20 Sample APPC for MVS Configuration File

```
sbiDBS.MaxAgents =16
sbiDBS.AutoStart =1
sbiDBS.Server1 =MVSAPPC
sbiDBS.MAXADDR =16
sbiDBS.CP =CP500

MVSDB2.AccessDriver =SBIDB2M
MVSSPD.AccessDriver =SBISPDM
MVSJZS.AccessDriver =SBIJZSM
MVSFILE.AccessDriver =ACVFILM

MVSAPPC.ServerEnabled =1
MVSAPPC.OperatingMode =SERVER
MVSAPPC.LocalMethod =MultiplexSVP
MVSAPPC.AccessDriver =SBIRTMM
MVSAPPC.ProtocolDriver =SBIAPPCM
MVSAPPC.TPname =APPCACV1
MVSAPPC.MODEname =APPCPCLM
MVSAPPC.LUname =ACVLU01
MVSAPPC.packetsize =8192
MVSAPPC.receivetimeout =0
MVSAPPC.transmitttimeout =0
MVSAPPC.SASDebug =0

JSI.JSISSID =JSI1
JSI.JESSSID =JES2
JSI.JSIDLL =00
JSI.SPOOLBYOWNER =0

FOREGROUND.STARTEDPROC=BMCAKMFG

SCRIPT.FILE =BMCADMN.V621.V62.SCRIPT

DOPTS.DBAL_DIRECT =BMCADMN.V621.V62.LOAD(KGCDOPT)
```

Table 4-4 describes some of the important configuration parameters, which you may need to modify manually.

Table 4-4 APPC/MVS Configuration Parameter Descriptions (Part 1 of 2)

Parameter	Description
AccessDriver	name of the RTM driver program The value is SBIRTMM.
LocalMethod	indicates multiplexed service provider The value is MultiplexSVP.

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Table 4-4 APPC/MVS Configuration Parameter Descriptions (Part 2 of 2)

Parameter	Description
LUname	the local LU name that has been defined to VTAM for the server
MODEname	the default Mode Name table entry The entry should match the DLOGMODE parameter of the APPL definition that is used to define the local LU to VTAM.
OperatingMode	indicates operation as an APPC/MVS Server The value is SERVER.
Packetsize	size of the data buffer used by the server The default is 8192.
ProtocolDriver	name of the APPC/MVS protocol driver program The value is SBIAPPCM.
Receivetimeout	This parameter is not specified. The value is 0.
SASDebug	flag that disables (or enables) the SAS/C Debugger This flag should be set to 0.
ServerEnabled	flag that enables (or disables) the server This flag should be set to 1.
TPname	the name that is used to describe this server to APPC/MVS The Tpname is a 1 to 64 character name that describes the server's address space. This name may or may not be the started task name or the job name of the server.
Transmittimeout	This parameter is not specified. The value is 0.

All APPC/MVS parameters have a prefix of MVSAPPC. The SBIDBS.SERVER1 parameter must reflect the type of server that is implemented. For APPC/MVS, the type of server should be MVSAPPC. The other parameters within the configuration file are not related to APPC/MVS, so they do not need to be changed.

Additional Reference Documents

The following documents provide additional reference information:

- *MVS/ESA Planning: APPC Management Reference Manual*
- *MVS/ESA Application Development: Writing Servers for APPC/MVS*

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- *MVS/ESA Application Development: Writing Transaction Programs for APPC/MVS*
- *VTAM Network Implementation Guide*

Where to Go from Here

After you set up the MVS Server, you set up the SNA Gateway Server to connect to the MVS Server. For more information, see “Setting Up the SNA Gateway Server” on page 4-37.

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Setting Up the SNA Gateway Server

Summary: The second task in the APPC configuration process requires you to set up the SNA Gateway Server for connectivity to the MVS Server. The MVS Server uses the APPC/MVS Server facilities to support an APPC independent LU 6.2 connection to the SNA Gateway Server. Several steps are required to configure the SNA Gateway Server to support this APPC connection.

Before You Begin

Before you set up the SNA Gateway Server, be sure that you completed the steps in “Setting Up the MVS Server” on page 4-28.

To Set Up the SNA Gateway Server

Step 1 Define the APPC LU to VTAM.

To define the APPC LU in a VTAM major node, you can define an LU with LOCADDR set to 0 and a LOGMODE parameter that supports APPC. For the PU macro, add the CPNAME parameter and set it equal to the Control Point Name value for the SNA Gateway Server (see Step 6 on page 4-40).

The example in Figure 4-21 defines an APPC LU named MSAUL100. In this example, the MVS VTAM system programmer has created a VTAM logon mode table called ACVAPPC with an APPC-capable logon mode entry called APPCPCLM.

Figure 4-21 Sample APPC LU Definition for an SNA Gateway Server

```
MSAUP100 PU ADDR=04,                                                    X
            CPNAME=AUS3,                                                X
            DLOGMOD=N32702,                                             X
            PUTYPE=2,                                                   X
            MAXDATA=1024,                                               X
            MAXOUT=7,                                                   X
            MAXPATH=1,                                                  X
            IDBLK=05D,                                                  X
            IDNUM=B0927

MSAUL100 LU LOCADDR=0,ISTATUS=ACTIVE,MODETAB=ACVAPPC,DLOGMOD=APPCPCLM
```

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Step 2 Define a local APPC LU to the SNA Gateway Server by performing the following actions at the SNA Gateway Server console:

2.A In the **Servers and Connections** window, select the server.

2.B From the Edit menu, choose **Insert**.

2.C Select **APPC (LOCAL)**.

2.D Specify the following APPC (LOCAL) properties:

1. Type the LU Alias and LU Name. These properties are the same as those in the VTAM major node (MSAUL100 in Figure 4-21 on page 4-37).

2. Type the network name. This network is the same network as the VTAM where the LU Alias resides.

3. Deselect the **Enable Automatic Partnering** option.

4. Select the **Member of Default Outgoing Local APPC LU Pool** option.

Step 3 Define a remote APPC LU to the SNA Gateway Server by performing the following actions at the SNA Gateway Server console:

3.A In the **Servers and Connections** window, select the connection.

3.B From the Edit menu, choose **Insert**.

3.C Select **APPC (REMOTE)**.

3.D Specify the following APPC (REMOTE) properties:

1. Type the LU Alias and LU Name. These properties are the same as those in the MVS Server (ACVLU01 in Figure 4-21 on page 4-37).

2. Type the network name. This property is the name of the VTAM where the MVS Server resides.

3. Select the **Supports Parallel Sessions** option.

4. Deselect the **Enable Automatic Partnering** option.

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3.E To partner the local and remote LU, select **Partners** from the APPC(REMOTE) properties.

1. Select **Modes** and create a logon mode with the same name and characteristics as those used by the Database Administration MVS Server (which is APPCPCLM in the previous example). Use the same RU size as the one that was defined for the mainframe logon mode.

   Note: To allow subtasking or foreground processing, the logon mode definition's maximum number of sessions must be greater than one.

2. Select **Add** and choose the local LU that you defined in Step 2 and the logon mode entry that you defined in the previous step.

When you have finished selecting the local partner, the LU 6.2 Partner LU screen should contain an entry of 1.

Step 4 Add a CPI-C symbolic destination to the SNA Gateway Server by performing the following actions at the SNA Gateway Server console:

4.A From the Options menu, choose **CPI-C**.

4.B Select **Add** and specify the following properties for the symbolic destination:

1. Select the symbolic destination name that the PC client will use to access this LU. This name can be 1 to 8 characters long. Make a note of this CPI-C Symbolic Destination Name for later use during the client configuration.

2. For the Partner TP Name, select **Application** and enter the TP name of the MVS Server (APPCACV1 in Figure 4-21 on page 4-37).

3. For the Partner L name, select **Alias** and enter the MVS Server LU (ACVLU01 in Figure 4-21 on page 4-37).

4. For the Mode Name, select the logon mode that is defined for the MVS Server (APPCPCLM in Figure 4-21 on page 4-37).

Step 5 Define a default local LU for the SNA Gateway Server by performing the following actions at the SNA Gateway Server console:

5.A Select the SNA Gateway Server Admin Icon.

5.B In the **Servers and Connections** window, select the server.

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5.C Select **Users and Groups**.

5.D Double-click the group **Everyone**.

5.E Add the previously defined Local LU alias and Remote LU alias (MSAUL100 and ACVLU01, respectively, in Figure 4-21 on page 4-37).

Step 6 Specify the SNA Gateway Server Control Point Name by performing the following actions at the SNA Gateway Server console:

6.A Select the SNA Gateway Server Admin Icon.

6.B In the **Servers and Connections** window, select the server.

6.C From the Services menu, choose **Properties**.

6.D In the **Server Properties** dialog box, specify the following items:

1. Enter the Network Name. This name is the same as the VTAM where the MVS Server resides.

2. Enter the Control Point Name. This name is the same as the CPNAME parameter for the PU definition in VTAM (AUS3 in Figure 4-21 on page 4-37). (See Step 1 on page 4-37.)

Where to Go from Here

After you set up the MVS Server and the SNA Gateway Server, you set up the client. For more information, see “Setting Up the Client” on page 4-41.

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Setting Up the Client

Summary: The third task in the APPC configuration process requires you to set up the client for the Database Administration products.

Before You Begin

Before you set up the client, be sure that you completed the steps in “Setting Up the SNA Gateway Server” on page 4-37.

To Set Up the Client

Step 1 Install the Microsoft SNA Client on the user’s PC.

The client requires the Microsoft Windows 95/98 or Windows NT SNA Client. You will need to know about the SNA Gateway Server to supply the SNA Client with information about the particular transport protocol to be used, as well as the Domain setting and Primary Server name.

Step 2 Configure the APPC SNA host.

To install and configure the client for an SNA host session you must use the host configuration tool.

Once the client has been installed on the user’s PC, you must use the session configuration tool to configure a host system and session profile. Within the host system configuration section, a selection for APPC SNA is provided.

Several installation parameters are provided to complete the host configuration. The CPI-C Symbolic Destination Name for APPC services, defined previously in the SNA Gateway Server, is (in most cases) the only parameter that is necessary to identify the MVS Server. However, additional parameters can be used to selectively override the site information table—CPI-C Symbolic Destination Name table—defined on the SNA Gateway Server. Table 4-5 on page 4-42 describes these installation parameters.

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Table 4-5 Installation Parameters

Parameter	Description
Symbolic Destination Name	*(required)* provides the CPI-C Symbolic Destination Name that was defined in the SNA Gateway Server to describe the MVS Server application This parameter must match the exact name that is used in the SNA Gateway Server setup.
LU Name	*(optional)* describes the APPC LU name to be used when establishing the conversation with the MVS Server This value should be specified as a fully qualified SNA LU name. A qualified LU name consists of the network name separated from the logical unit name by a period, with each name not exceeding 8 characters.
MODE Name	*(optional)* allows an overriding specification to the operating mode-table entry for the connection to the MVS Server
TP Name	*(optional)* allows an overriding specification to the teleprocessing program name that is associated with the connection that identifies the MVS Server

Note: Use of the LU name, MODE name, or TP name parameter allows overrides to the client's CPI-C Symbolic Destination Name table entry. When all the parameters are used together, the CPI-C Symbolic Destination Name table that is referenced is bypassed.

Where to Go from Here

After you configure the APPC SNA communication protocol, you verify the setting for your host-code page. For more information, see "Confirming the Host-Code Page for the MVS Server" on page 4-43.

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Confirming the Host-Code Page for the MVS Server

Summary: This section describes the steps that you must perform to verify the setting for your Host-Code Page. The Host-Code Page setting specifies the table that the application uses to map the EBCDIC codes on the server to the appropriate single-byte ASCII codes on the PC during the transfer of data.

Step 1 Edit the INI#ACV file.

Step 2 Set the value of the sbiDBS.CP variable in the INI#ACV file to one of the Host-Code Page values in Table 4-6.

Note: The default value for the sbiDBS.CP variable is CP037.

Table 4-6 Code Page Values

Host-Code Page Value	Language
CP037	English (US)
CP273	Austrian or German
CP277	Danish or Norwegian
CP278	Finnish or Swedish
CP280	Italian
CP284	Spanish
CP285	English (England)
CP297	French
CP500	International

Step 3 Start PATROLDB to activate the MVS Server.

Where to Go from Here

After you confirm the host-code page, you determine whether to enable the use of secondary authorization IDs for each client. For more information, see “Enabling the Use of Secondary Authorization IDs” on page 4-44.

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Enabling the Use of Secondary Authorization IDs

Summary: This section describes the steps that your DB2 system administrator must perform to enable the use of secondary authorization IDs for the MVS Server. The sample connection exit that is supplied by IBM builds a list of secondary authorization IDs that is based on the user ID that is associated with the started task address space. As a result, this exit does not build the list of secondary authorization IDs for each client as it does for a TSO address space. To properly build the list of secondary authorization IDs for each client, BMC Software modified the exit. The version of the connection exit that is supplied by BMC Software builds a list of secondary authorizations that is based on the user ID that is associated with each client for the MVS Server. This sample exit is distributed in the product's *HLQ*.CNTL data set as member DSN3SATH.

When the modified version of the exit is used, the secondary authorizations are dependent on RACF. If RACF and the list-of-groups checking are activated, the connection exit sets the list of DB2 secondary authorizations to the list of RACF group names to which the user ID is connected.

If you are already running a modified connection exit or your site uses a security system other than RACF, you should review the sample exit that BMC Software provided and note any modifications. (Modifications are indicated by BMC34575 after each line of code.) You can then incorporate these changes into your existing exit.

Note: If your DB2 subsystems do not share a single *HLQ*.SDSNEXIT data set, your DB2 system administrator should perform the following steps for each subsystem.

Step 1 Rename member DSN3@ATH in the *HLQ*.SDSNEXIT data set to another name.

Step 2 Assemble and link member DSN3SATH in the *HLQ*.CNTL data set with the same JCL that is provided for the IBM-supplied exit. DB2 creates DSN3@ATH.

Step 3 Cycle DB2.

Where to Go from Here

After you enable the use of secondary authorization IDs, you verify the installation. For more information, see "Verifying the Installation of the MVS Server" on page 4-45.

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Verifying the Installation of the MVS Server

Summary: This section describes the steps that you must perform to verify the installation.

Step 1 Refer to “Starting and Configuring the Client” on page 9-18 to start and configure the client.

Step 2 If necessary, follow the procedure in the online Help.

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Chapter 5 Installing ALTER

This chapter presents the following topics:

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Overview

This chapter provides information about how to prepare to install the BMC Software ALTER for DB2 product. The ALTER product provides both management of application structures within a DB2 subsystem and a means of migrating application structures from one DB2 subsystem to another. ALTER performs the following major functions:

- changes data structures
- migrates data structures and their associated data

ALTER automates the task of changing data structures. It determines the impact of the changes across the DB2 subsystem and prepares the most efficient strategy for implementation. ALTER also performs extensive error checking to ensure that the changes are correct before execution.

ALTER provides full management support for the following DB2 data structures:

- storage group
- database
- table space
- table
- check constraint (DB2 Version 4.1 or later)
- foreign key
- index
- view
- trigger (DB2 Version 6.1 or later)
- alias
- synonym

When you use ALTER to specify any of these objects for change, ALTER automatically propagates the change as needed for any dependent objects. ALTER restores all data, dependencies, and authorizations, and supports a large number of data-type conversions.

ALTER is able to use the BMC Software LOADPLUS, UNLOAD PLUS®, REORG PLUS, CHECK PLUS, RECOVER PLUS, and COPY PLUS utilities to speed up the execution of structure changes and migrations. In addition, ALTER can be upgraded to the CHANGE MANAGER product easily.

For information about ALTER, read the *ALTER and CHANGE MANAGER for DB2 User Guide*.

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Installation Considerations

When you use the Install System to install the Administrative Products for DB2, the installation process generates a customized installation data set. This data set contains customized jobs that are created to install these products into your specific DB2 environment. One of these jobs establishes the default processing option values. The job name begins with a $ character, followed by a three-character identifier that varies depending on which Install System installation path that you used. The last four characters are always DOPT.

The $*xnn*DOPT member of the installation data set contains an assembly language program with an options macro call that establishes the default processing values. You can tailor the installation of the product, including changing plan names, by editing the default values in the $*xnn*DOPT member.

Installation Defaults

During installation, you can specify names for options modules, synonym qualifiers, database names, creator names, and collection names. The default values for these names are listed in Table 5-1. In these default values, *v* indicates the version, *r* indicates the release, *m* indicates the maintenance level, and *c* is a character value indicating the DB2 version where B indicates version 3.1, C indicates version 4.1, D indicates version 5.1, and E indicates version 6.1 or later.

Table 5-1 ALTER Installation Default Values

Installation Default	Value
Default Options Module	ALUDOPD1
Synonym Qualifier	ALU*vrmc*D
Database Name	BMCAL*vrc*
Creator Name	BMCAL*vrc*
Collection Name	ALU*vrmc*_D_MAIN
Server Main Collection Name	ACV*vrm*_D_MAIN

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Upgrading ALTER to CHANGE MANAGER

To upgrade to CHANGE MANAGER without migrating your existing data in ALTER, perform a Full installation of CHANGE MANAGER. To upgrade to CHANGE MANAGER and to migrate your existing data from ALTER to CHANGE MANAGER, see “Migrating Data From ALTER to CHANGE MANAGER” on page 3-28.

Controlling Access

Plans are provided with ALTER that access Specification, Analysis, and Execution. You can control access to each of these components by controlling the authorization that is granted to each of these plans.

Plan names vary depending on the version and release of the product that you are using. ALTER and CHANGE MANAGER plan names have the format *ppvrmcyz*, where *pp* is the product code; *vrm* is the version, release, and maintenance level; *c* is the DB2 level (B indicates version 3.1, C indicates version 4.1, D indicates version 5.1, and E indicates version 6.1 or later); *y* is the access type; and *z* is the plan function.

Note: The *c* character in the syntax *ppvrmcyz* is only used when defining plans for ALTER and CHANGE MANAGER versions 5.2 or later. Earlier versions use the syntax *prdvrmyz*.

Execution component plan names have the format *prdvrmnn*, where *prd* is the product code; *vrm* is the version, release, and maintenance level; and *nn* is a unique plan identifier.

The default plans that are shipped with this release follow, along with their default plan names.

ALTER Specification and Analysis Plans

The following plans are used by the Specification, Import, and Analysis components.

AL*vrmc*DF—Front End Plan

This plan controls access to the ALTER interface. Authority to use this plan allows you to create and maintain ALTER objects and perform other Front End functions.

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ACV*vrm*DM—Display Catalog and SQL Information

Access to this plan is required to use the GUI for ALTER. It displays catalog and SQL generation and execution information.

AL*vrmc*DI—Import Plan

This plan is provided by the Import component of ALTER, and allows users to import DDL into the ALTER Change Definition tables.

AL*vrmc*DS—Specification Plan

This plan accesses the Specification component within ALTER. This plan provides a way for users to *request* changes to database objects and data. With access to Specification, users can also search and review groups of objects.

AL*vrmc*DA—Analysis Plan

This plan allows users access to the Analysis component to analyze changes and to generate a worklist.

You cannot make actual changes to DB2 objects and data by *creating a worklist*. The Specification and Analysis plans provide a way for users to *request* and *analyze* changes. For this reason, you can usually place minimum restrictions on using Specification and Analysis.

AL*vrmc*DE—Environment Plan

Access to this plan allows users to invoke the ENVI command to review their system environment. Since this plan is not accessed outside of the other ALTER components, you can usually grant PUBLIC access to this plan. This plan does not control the use of the **ENVI** keyword with batch components.

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ALTER Execution Plans

The following plans are used by the Execution component.

AEX*vrm*AA—Execution Monitor Entry (Authorization)

EXECUTE authority on this plan allows users to execute a worklist. You should, therefore, carefully consider who receives authorization to use this plan.

AEX*vrm*AM—Execution Monitor

This plan does not control who has authorization to execute a worklist. It does, however, provide users with the ability to attach to DB2 with alternate authorization IDs for the -AUTH commands. Because this plan does not affect who can run Execution, you may grant PUBLIC authority to this plan.

The execution plan contains some packages that use dynamic SQL. Some of these packages will cause long-running SQL and may need to be added to your RLST. The packages are described as follows:

- AEXAUNLD is the package that does the unload of data from tables.
- AEXSQLIO is the package that does all worklist -SQL commands, including deletions before a data-only migration -LOAD.
- AEXESTDL is the package that does some of the restart logic before the restart of a -LOAD, including the deleting of previously-loaded rows.

By restricting authorization to run the Execution plans, you can control what change and migrate functions users can perform. Giving wide access to Specification and Analysis while controlling access to the Execution Monitor Entry lets your users run ALTER for training purposes or use it as a system dictionary.

Further control over the Execution component’s authorization switching function is provided by the Execution Security Exit.

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ALTER Object Security

The security features of ALTER provide you with the ability to restrict access to ALTER Work IDs and to separate projects that access the same set of tables. The ability to maintain the security features is restricted to users who have been granted SELECT and UPDATE authority on the security table, as follows:

tbcreator.V*vr*_CM_SECURITY

The variable *tbcreator* is the ALTER creator ID that is specified at installation, and the variable *vr* is the version and release of ALTER.

Install System GRANTs are only executed on plans and collections. The Install System does not execute grants on tables. If you want non-SYSADM users to be Security Administrators, execute the necessary GRANT SELECT and UPDATE statements.

JSI/JES Interface Installation

The JSI/JES Interface installation consists of several installation options. These options help to define the interface to the MVS Server started task for the specific MVS and JES2 environment in which the server task will be operating. Currently, support for JES3 is not provided.

The installer needs to provide the following information:

- The name of the JES2 macro library data set for that release (typically, this name is `'SYS1.HASPSRC'`).
- The MVS subsystem name that JES2 is using on that system and with which this particular MVS server task will communicate (default of JES2 is provided). The information that is required can be obtained from your local MVS or JES system programmer.
- An MVS subsystem name which the JSI/JES Interface will use. This name should be limited to four characters and reflect the name of the JSI interface that will be used by that particular server started task.

Note: Each MVS server started task should have a unique JSI subsystem name (default of JSI1 is provided). No MVS system configuration changes are required for this parameter definition.

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Once these parameters have been determined, the installation process builds an installation job. This job may assemble a JES Offset module for the specified SP level of JES2 that is using the specified macro library, if necessary. This JES Offset module is then linked into the main JSI/JES interface load module. The installation also updates the MVS Server started task JCL and the server INI file with the subsystem names for both JES2 and the JSI interface.

The MVS Server INI file is a PDS member that contains various parameters that the server uses for initialization. The variables that define the JSI/JES interface in the INI file are:

```
JSI.JESSSID =JES2        JES2 subsystem name
JSI.JSISSID =JSI1        JSI/JES subsystem name
JSI.DLL     =00          JSI/JES main Load module ID
JSI.SPOOLBYOWNER =0      Restrict spool access by owner
```

Default Option Listing (DOPTs)

This section provides an example of the default options (DOPTs) module listing for ALTER (see Figure 5-1 on page 5-9). The DOPTs listing is created by the Install System and resides in $*xnn*DOPT. The DOPTs listing also resides in *HLQ*.CNTL with the same member name as the DOPTs.

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Figure 5-1 ALTER Default Options Listing (Part 1 of 3)

```
*********************************************************************
*
* MODULE      : ALUDOPD1
* FUNCTION    : ALTER for DB2
* COPYRIGHT   : COPYRIGHT BMC SOFTWARE INC., 2000
* LEVEL       : RELEASE 6.2 September 2000
* FUNCTIONS   : DEFINE THE DEFAULT PROFILE VARIABLES
*
*********************************************************************
ALUDOPTS CSECT ,
ALUDOPTS RMODE 24
ALUDOPTS AMODE 24
ALUDOPTS $ALUDOPT PRODUCT=ALTER,                                      *
               DATE=&SYSDATC,                                         *
               PC=ALU,                                                *
               VRM=(621E,R),                                          *
               SSID=(DBDB,R),                                         *
               DB2CAT=('DBDBCAT',R),                                  *
               EURO=(N,R),                                            *
               SYSTYPE=S,                                             *
               PIC=N,                                                 *
               LOG=N,                                                 *
               SL1=('''BMCADMN.V621.D61.LOAD''',R),                   *
               SL2=('''SYS3.DBDB.DSNEXIT''',R),                       *
               SL3=('''SYS2.DB2V61M.DSNLOAD''',R),                    *
               SL4=' ',                                               *
               SL5=' ',                                               *
               ISPSLIB=('''BMCADMIN.V621.D61.SLIB''',R),              *
               TSOSX=N,                                               *
               JC1='//&&USERID.&&JOBCHAR JOB (ACCT),''&&PGMR'',',     *
               JC2='// CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),',           *
               JC3='// NOTIFY=&&USERID',                              *
               JC4='//*',                                             *
               JC5='//*',                                             *
               DBRM1=,                                                *
               DBRM2=,                                                *
               DBRM3=,                                                *
               DBRMLIB=N,                                             *
               WU=SYSDA,                                              *
               WPS=10,                                                *
               WSS=2,                                                 *
               WDC=,                                                  *
               WSC=,                                                  *
               WMC=,                                                  *
               SWU=SYSDA,                                             *
               SWPS=10,                                               *
               SWSS=2,                                                *
               WDSN='''&&PREFIX..&&SSID..&&WORKID''',                 *
               WLU=SYSDA,                                             *
               WLPS=15,                                               *
```

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Figure 5-1 ALTER Default Options Listing (Part 2 of 3)

```
   WLSS=5,                                                    *
   JDSN='''&&PREFIX..ANALYSIS(&&WORKID)''',                   *
   JDSNE='''&&PREFIX..EXEC(&&WORKID)''',                      *
   JDSNBG='''&&PREFIX..JCLGEN(&&WORKID)''',                   *
   SDSN=SYSOUT,                                               *
   SDSNE=SYSOUT,                                              *
   CATAUDIT=(N,R),                                            *
   CATRECOV=(N,R),                                            *
   SYSRPREF='&&PREFIX..&&SSID..&&WORKID8',                    *
   SYSRUNIT=SYSDA,                                            *
   SYSRPS=10,                                                 *
   SYSRSS=2,                                                  *
   SYSRMAX=,                                                  *
   SYSRMAXU=,                                                 *
   SYSCPREF='&&PREFIX..&&SSID..&&OBNOD',                      *
   SYSCUNIT=SYSDA,                                            *
   SYSCPS=10,                                                 *
   SYSCSS=2,                                                  *
   SYSCMAX=,                                                  *
   SYSCMAXU=,                                                 *
   RECVPREF='&&PREFIX..&&SSID..&&OBNOD',                      *
   RECVUNIT=SYSDA,                                            *
   RECVPS=10,                                                 *
   RECVSS=2,                                                  *
   RECVMAX=,                                                  *
   RECVMAXU=,                                                 *
   ARCHPREF='&&USERID..&&SSID',                               *
   ARCHUNIT=SYSDA,                                            *
   ARCHPS=10,                                                 *
   ARCHSS=2,                                                  *
   SEQI=050,                                                  *
   SYNCPNT=00,                                                *
   AMS=Y,                                                     *
   ALLOC=N,                                                   *
   STORCLAS=N,                                                *
   DATACLAS=N,                                                *
   MGMTCLAS=N,                                                *
   JCLCLEAN=N,                                                *
   AUTHSW=(N,R),                                              *
   GLID=,                                                     *
   DASDMAN=(Y,R),                                             *
   CCSID=(E,R),                                               *
   IXTYPE=(2,R),                                              *
   VVALPROP=(N,R),                                            *
   BPOOLTS=BP0,                                               *
   BPOOLIX=BP0,                                               *
   LOCK=X,                                                    *
   DISCARDS=(0000,R),                                         *
   BMCSTATS=(N,R),                                            *
   BMCCOPY=(N,R),                                             *
```

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Figure 5-1 ALTER Default Options Listing (Part 3 of 3)

```
                BMCCHECK=(N,R),                                          *
                BMCLOAD=(N,R),                                           *
                BLDCU=(N,R),                                             *
                BLDBS=(N,R),                                             *
                UTILCOPY=(N,R),                                          *
                BMCUNLD=(N,R),                                           *
                REORG=(N,R),                                             *
                REBLD=(I,R),                                             *
                UNLDCOLL=N,                                              *
                SZDEVT=(3380,R),                                         *
                STATS=(S,R),                                             *
                UPDSTATS=(C,R),                                          *
                TABLEALL=(N,R),                                          *
                UNLDEMPT=(Y,R),                                          *
                STOPCOMM=(N,R),                                          *
                TABLEACC=(Y,R),                                          *
                COPYDD01=R,                                              *
                COPYDD02=N,                                              *
                RECVDD01=N,                                              *
                RECVDD02=N,                                              *
                HSMVOL=,                                                 *
                LOCATION=,                                               *
                TAPE1=CART,                                              *
                TAPE2=TAPE,                                              *
                TAPE3=TAPE,                                              *
                ATTN=Y,                                                  *
                ENVP=AL621EDE,                                           *
                FEP=AL621EDF,                                            *
                SPP=AL621EDS,                                            *
                ANP=AL621EDA,                                            *
                IMP=AL621EDI,                                            *
                EPP=AEX621AM,                                            *
                EAP=AEX621AA,                                            *
                EIP=DCIINSTL,                                            *
                ASUDOPT=ASUDOPD1,                                        *
                ACTDOPT=ACTDOPD1,                                        *
                ACVPLAN=ACV621DM,                                        *
                DEFERUIX='N'
     END
//LKED.SYSIN DD *
  NAME ALUDOPD1(R)
```

Note: The **,R** in the variable syntax indicates that the value specified will refresh the existing value of the variable in the user's ISPF profile data set, if the timestamp of the DOPTS is later than that in the user's ISPF profile member.

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Default Option Descriptions

This section describes the DOPTs listed in Figure 5-1 on page 5-9. In some cases, the default value for the option is listed.

ACTDOPT=ACTDOPD1

The name of the CATALOG MANAGER product's DOPTS module that the GUI for ALTER will use to interact with CATALOG MANAGER. This parameter is used only if CATALOG MANAGER is installed.

ACVPLAN=ACV*vrm*DM

The main DB2 plan for the GUI for ALTER.

ALLOC=N The allocation units to use for data sets that are managed by System Managed Storage (SMS). If the AMS is set to **Y**, then this option determines how ALTER and CHANGE MANAGER allocate space for VCAT-defined DB2 objects that SMS manages.

The DOPTs parameters are defined as follows:

C	cylinders
K	kilobytes
M	megabytes
N	SMS not in use (default)
T	tracks

AMS=Y Controls whether Analysis will, by default, generate AMS statements (IDCAMS DELETE and CREATE) in the worklist. You can use the **INCLUDE (AMS)** keyword to override this value. An entry of **N** generates a worklist -STOP command that allows you to complete the DELETEs and DEFINEs before the CREATEs that are located later in the worklist (**Y** or **N**).

ANP=AL*vrmc*DA Defines the Analysis plan name.

ARCHPPREF='&&USERID..&&SSID'

The high-level qualifier or prefix for data sets that is used for a BMC Software utility archive.

ARCHPS=10 The primary space allocation in cylinders for BMC Software utility archive data sets.

ARCHSS=2 The secondary space allocation in cylinders for BMC Software utility archive data sets.

ARCHUNIT=SYSDA The default UNIT that is used for BMC Software utility archive data sets.

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ASUDOPT=ASUDOPD1

The name of the DASD MANAGER PLUS product's DOPTs module that the GUI for ALTER will use to interact with DASD MANAGER PLUS. This parameter is used only if DASD MANAGER PLUS is installed.

ATTN=Y

Allows you to press the ATTENTION key to interrupt processing when **ATTN=Y**. This option allows you to stop processing, for example, when building a Mixed List in ALTER or CHANGE MANAGER (**Y** or **N**).

AUTHSW=N

Controls the method of authorization-ID switching that Analysis uses.

If you specify **AUTHSW=Y**, -AUTH commands are used in the worklist to switch the authorization ID for subsequent SQL statements and reBINDs. In this mode, you can add -SETS commands to the worklist for setting the authorization ID with SET CURRENT SQLID statements.

If you specify **AUTHSW=N**, -SETS commands are generated for switching the authorization ID, and -AUTH commands are not allowed.

If you specify **AUTHSW=B**, both -AUTH and -SETS commands are used. -AUTH commands are generated to set the original CREATEDBY values. -SETS commands are generated to set new OWNER values for all objects. The **B** option also causes authorization-ID switching before CREATE TABLE and CREATE INDEX statements, which is not done under either of the other options. When the AUTHSW keyword is used in the ALUIN input stream, it is equivalent to **AUTHSW=Y** in the DOPTs module.

Note: Do not use the AUTHSW keyword in the following situations:

- If **AUTHSW=N** is in the DOPTs module.
- If you are using a global authorization ID (GLID).

Note: If your site does not use DB2 secondary AUTHIDs, set **AUTHSW=Y**. Otherwise, set **AUTHSW=N**. If you require that the CREATEDBY field in the DB2 catalog remain unchanged after updates, then set **AUTHSW=B**.

Warning! Setting **AUTHSW=B** is not recommended because of a potential security exposure. This exposure exists because the DB2 catalog does not accurately reflect the primary authorization ID of the creator of the objects. If you must set **AUTHSW=B**, use the sample security exit (ALUEUSX1) to avoid the security exposure.

BLDBS=N

Determines whether the BMC Software LOADPLUS utility updates catalog statistics for the BMCSTATS utility tables during loads for DB2 Version 4.1 or earlier (**Y** or **N**).

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BLDCU=N Determines whether the BMC Software LOADPLUS utility updates statistics in the DB2 catalog during loads for DB2 Version 4.1 or earlier (**Y** or **N**).

BMCCHECK=N Specifies whether to use the BMC Software CHECK PLUS utility in place of the IBM CHECK DATA utility, for checking referential constraint violations in DB2 table spaces (**Y** or **N**).

BMCCOPY=N Specifies whether to use the BMC Software COPY PLUS utility in place of the IBM COPY utility. The DOPTs parameters are defined as follows:

Y Use BMCCOPY.
N Use IBMCOPY.
X Do not include copy operations.
F Do not include copy operations, but do start objects in copy pending status with ACCESS(FORCE).

BMCLOAD=N Indicates whether to use the BMC Software LOADPLUS utility for loads, in place of the IBM LOAD utility (**Y** or **N**).

BMCSTATS=N Indicates whether to use the BMC Software BMCSTATS utility for updating statistics in the DB2 catalog, in place of the IBM RUNSTATS utility (DB2 Version 4.1 or earlier). The DOPTs parameters are defined as follows:

Y Use BMCSTATS.
N Use RUNSTATS.
X Do not generate statistics.

BMCUNLD=N Specifies whether to use the BMC Software UNLOAD PLUS utility product in place of ALTER UNLOAD (**Y** or **N**).

BPOOLIX=BP0 Indicates the size of the buffer pool for user indexes. Valid values include BP0 through BP49.

BPOOLTS=BP0 Indicates the size of the buffer pool for user data. Valid values include:

- BP0 through BP49
- BP8K0 through BP8K9
- BP16K0 through BP16K9
- BP32K,BP32K1 through BP32K9

CATAUDIT=N The DDL audit logging indicator. If you have CATALOG MANAGER installed, an entry of **Y** causes Execution to log executed DDL statements in the CATALOG MANAGER DDL Audit Log (**Y** or **N**).

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CATRECOV=N The Drop Recovery indicator. This parameter is useful only if you have CATALOG MANAGER installed. Type **Y** if you want execution to save information in the CATALOG MANAGER drop recovery log about objects that are being dropped. ALTER or CHANGE MANAGER logs the information that is required for recovering any object that you drop. You must then use CATALOG MANAGER to recover the objects. See the *CATALOG MANAGER for DB2 Reference Manual* for information about Drop Recovery.

CCSID=E Provides the default encoding scheme for databases created using ALTER.

A ASCII
E EBCDIC

COPYDD01=R, COPYDD02=N, RECVDD01=N, RECVDD02=N

Defines image copies for the DB2 Copy and the BMC Software COPY PLUS and LOADPLUS utilities. The DOPTs parameters are defined as follows:

N no
C copy
R register and copy

These DOPTs control the input keywords to Analysis as follows:

- Local-copy parameters (*parm*s) for the COPYDDN keyword can be COPY01 and COPY02, separated by commas or blanks.

- Remote-copy parameters (*parm*s) for the COPYDDN keyword can be RECV01 and RECV02, separated by commas or blanks.

DASDMAN=Y Indicates whether version 5.1 or later of the BMC Software DASD MANAGER PLUS product is installed (**Y** or **N**). ALTER and CHANGE MANAGER select DB2 catalog statistics for space estimation. When **DASDMAN=Y**, any statistics from the BMCSTATS tables will be merged.

DATACLAS=N Indicates whether support for the DATACLAS parameter is required for VCAT-defined DB2 objects (**Y** or **N**).

DATE=&SYSDATC This parameter is used only if you have ASMA90 as your assembler.

DB2CAT or DB2CT=('DBDBCAT')

The VSAM CATALOG alias that contains the data sets of the DB2 catalog.

DBRM1, DBRM2, DBRM3

Names the three default DBRM libraries.

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DBRMLIB=N Includes the LIBRARY parameter on the BIND statement for plans and packages (**Y** or **N**).

Note: A disadvantage to adding the LIBRARY parameter to the BIND PLAN command is that the order of the libraries on the BIND could be incorrect. If some DBRMs are present in multiple libraries, ALTER and CHANGE MANAGER cannot guarantee that the concatenation will result in every DBRM coming from the correct library.

DEFERUIX=N For DB2 Version 5 and later, enables ALTER and CHANGE MANAGER to create unique indexes with the DEFER YES parameter (**Y** or **N**).

DISCARDS=*nnnn* Used by ALTER and CHANGE MANAGER to specify the number of discard data sets to allow. The parameter *nnnn* specifies the number of discards in a range from 0 to 9999. DISCARDS=0 means that no maximum number of discards exists.

If the DISCARDS option is set to 1, the product will generate one **//SYSDISC** file for the entire run, and DISCARDS 1 is generated as a LOAD parameter. This action will cause the load utility to terminate with a return code of 8, if any records must be discarded.

If the DISCARDS option is set to anything other than 1, a different discard file will be generated for each LOAD, and DISCARDS *n* will be generated as a LOAD parameter for each LOAD step (where *n* is the maximum number of discards). This action will cause the load to terminate if the discard maximum is reached. If fewer records are discarded, the discard file will contain them and execution will proceed to the next step in the worklist.

EAP=AEX*vrm*AA Defines the Execution Authorization plan name, which determines if a user is authorized to run Execution.

EIP=DCIINSTL Defines the Installation plan name.

ENVP=AL*vrmc*DE Defines the Environment plan name, which is used to display ALTER and CHANGE MANAGER environment information.

EPP=AEX*vrm*AM Defines the Execution primary plan name.

EURO=N Instructs ALTER, CHANGE MANAGER, and DASD MANAGER PLUS to expect numbers in the European format (comma used for the decimal point) and to create output in European decimal format (**Y** or **N**).

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This parameter is particularly important when ALTER or CHANGE MANAGER parses index LIMITKEY values that are separated by commas. If the EURO keyword is present, ALTER or CHANGE MANAGER requires delimiting commas to be followed by blanks.

Note: The Import, Specification, Baseline, and Compare components use the value for EURO from the DOPTs module, but do not support use of the EURO keyword in the ALUIN parameter input data stream.

FEP=AL*vrmc*DF Defines the Front End plan name.

GLID=*id* Defines a global authorization ID (GLID). This authorization ID is used instead of the authorization ID of the person who submits the Analysis job. The worklist begins with a -GLID command that switches authorization to the GLID.

HSMVOL=*vol* Specifies the volume ID that indicates an archived data set if you are using a disk management system. If this volume ID is encountered, ALTER or CHANGE MANAGER uses a template of default values for data set allocation.

IMP=AL*vrmc*DI Defines the Import plan name.

ISPSLIB This value is used by the GUI for ALTER for JCL generation.

IXTYPE=2 For DB2 Versions 4 and 5, the default Index type that ALTER and CHANGE MANAGER use when no type is specified on a create index command.

1 Type 1 index
2 Type 2 index (DB2 Version 4 and later)

JC1='//&&USERID.&&JOBCHAR JOB (ACCT),''&&PGMR'','

JC2='// CLASS=A, MSGCLASS=X,MSGLEVEL=(1,1),'

JC3='// NOTIFY=&&USERID'

JC4='//*'

JC5='//*'

Defines the jobcard that the Front End uses when it generates JCL. Symbolic variables can be used and are described in the Symbolic Variable appendix of the respective products' reference manuals.

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JCLCLEAN=N Enables you to generate a job step that automatically deletes many of the permanent (also known as non-temporary) data sets that the Execution component creates. These data sets are created during worklist processing and have a disposition (`NEW,CATLG,CATLG`). The automatic delete step is only performed if the condition code that is returned from any previous job step is four or less (**Y** or **N**).

JDSN='''&&PREFIX..ANALYSIS(&&WORKID)'''
Defines the default data set name that is used for Analysis JCL. This data set can be either a sequential or partitioned data set. Hardcoding a member name is not recommended for a partitioned data set. The products automatically use the Work ID as the member name.

JDSNBG='''&&PREFIX..JCLGEN(&&WORKID)'''
For DB2 Version 5 and later, defines the default data set name that is used for batch JCL Generation. This data set can be either a sequential or partitioned data set. Hardcoding a member name is not recommended for a partitioned data set. The products automatically use the Work ID as the member name.

JDSNE='''&&PREFIX..EXEC(&&WORKID)'''
Defines the default data set name that is used for Execution JCL. This data set can be either a sequential or partitioned data set. Hardcoding a member name is not recommended for a partitioned data set. The product automatically uses the Work ID as the member name.

LOCATION The local subsystem location. If you are using Single Point Entry, the parameter is set to **SPE_METHOD**.

LOCK=X Controls the SQL LOCK TABLE statements that are issued by the Execution component for ALTER unloads. The LOCK parameter does not apply to the BMC Software UNLOAD PLUS product.

- **S** Issue the SQL LOCK TABLE IN SHARE MODE statement
- **X** Issue the SQL LOCK TABLE IN EXCLUSIVE MODE statement
- **N** Do not issue SQL LOCK TABLE statements

LOG=N Specifies that records be logged during loads that use the IBM LOAD utility (**Y** or **N**).

MGMTCLAS=N Indicates whether support for the MGMTCLAS parameter is required for VCAT-defined DB2 objects (**Y** or **N**).

PC=ALU Defines the product code to the ALTER components.

PIC=N (Pre-Image Copy) Indicates whether an image copy should be taken of each table space before a database is dropped, a table is dropped, or the table space is dropped or reorganized (**Y** or **N**).

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PRODUCT='PRODUCT NAME'
Defines the product name. For example, **PRODUCT = ALTER**.

REBLD=I For DB2 Version 6 and later, specifies whether to use the rebuild utility from IBM or BMC Software or no rebuild utility. If **REBLD=N**, eligible indexes will not be created with DEFER YES. If a non-unique index is being dropped or created in a worklist, and its parent table is not being dropped or created in the worklist, then the index will be created with DEFER YES, if **REBLD=I** or **REBLD=B**.

The DOPTs parameters are defined as follows:

B BMCRECOVER
I IBMREBUILD
N NO REBUILD

RECOV=I For DB2 Version 5 and earlier, specifies whether to use the recover utility from IBM or BMC Software or no recover utility. If **RECOV=N**, eligible indexes will not be created with DEFER YES. If a non-unique index is being dropped or created in a worklist, and its parent table is not being dropped or created in the worklist, then the index will be created with DEFER YES, if **RECOV=I** or **RECOV=B**.

The DOPTs parameters are defined as follows:

B BMCRECOVER
I IBMRECOVER
N NO RECOVER

RECVMAX The offsite copy threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

RECVMAXU The offsite copy secondary, or alternate, unit that is used for any overflow.

RECVPREF='&&PREFIX..&&SSID..&&OBNOD'
Defines the default prefix (high-level qualifier) that is used for the RECV*nnn* recovery data sets. The &&OBNOD symbolic variable resolves to database.&SPNAME. &SPNAME resolves to a table space name or to an index space name, depending on the type of object that is being copied.

RECVPS=10 Defines the default primary space allocation in cylinders for RECV*nnn* recovery data sets.

RECVSS=2 Defines the default secondary space allocation in cylinders for RECV*nnn* recovery data sets.

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RECVUNIT=SYSDA Defines the default unit that is used for creating RECV*nnn* recovery data sets.

REORG=N Indicates whether to generate reorganizations in worklists for operations which require reorganizing table spaces and indexes. Changes to attributes such as PRIQTY, SECQTY, PCTFREE, FREEPAGE, and VOLUME (for VCAT defined partitions) can cause placement of reorganization commands in the worklist. If reorganizations are to be generated, this option also indicates whether to use the BMC Software REORG PLUS product in place of the IBM REORG utility.

- **B** Generate BMC reorganizations in worklists.
- **I** Generate IBM reorganizations in worklists.
- **N** Do not generate reorganizations in worklists (default).

SDSN=SYSOUT The default data set for diagnostic messages for Analysis. This option may be a sequential data set, the keyword SYSOUT, or TERM (terminal). If you use SYSOUT, the diagnostic messages are written to the JES SPOOL. If you use TERM, the diagnostic messages are written to your terminal.

SDSNE=SYSOUT The default data set for diagnostic messages for Execution. This option may be a sequential data set or the keyword SYSOUT. If you use SYSOUT, the diagnostic messages are written to the JES SPOOL.

SEQI=050 Defines the sequence-number increment for worklists and CDL files.

SL1=('''*HLQ*.LOAD''')
The STEPLIB library that contains the BMC Software load modules.

SL2=('''SYS1.DSNEXIT''')
The optional first STEPLIB library for DB2 load modules. This library is concatenated to the library that keyword SL1 specifies.

SL3=('''SYS1.DSNLOAD''')
The optional second STEPLIB library for DB2 load modules. This library is concatenated to the library that keywords SL1 and SL2 specify.

SL4=('''SYS1.OTHER.LOADLIB1''')
Optional additional STEPLIB libraries.

SL5=('''SYS1.OTHER.LOADLIB2''')
Optional additional STEPLIB libraries.

SPP=AL*vrmc*DS Defines the Specification plan name.

SSID=DB2 Identifies the DB2 subsystem ID (SSID). The SSID must match the -SSID command in the worklist. This parameter is required.

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STATS=S Indicates what type of statistics should be generated (DB2 Version 5.1 or later). The DOPTs parameters are defined as follows:

- **S** Standalone—The worklist generates either a -BMCS or -RNST command in the worklist.
- **U** Utility—The worklist combines statistics with a utility (Reorg, Copy, Load) whenever possible.
- **X** No statistics are generated.

STOPCOMM=N For DB2 Version 5.1 and later, indicates whether an AT (COMMIT) generates in a worklist when a STOP is created.

STORCLAS=N Indicates whether support for the STORCLAS parameter is required for VCAT-defined DB2 objects (**Y** or **N**).

SWPS=10 Defines the default primary space allocation for sort work in cylinders.

SWSS=2 Defines the default secondary space allocation for sort work in cylinders.

SWU=SYSDA Describes the sort work unit.

SYNCPNT = *parm* Creates additional -SYNC commands in a worklist, based on the number of -SQL commands since the last -SYNC command. The variable *parm* specifies the maximum number of -SQL commands that can be in the worklist before a -SYNC command is created.

The option also places an additional -SYNC command before the next -SQL command. Valid values for *parm* are from 0 to 99. Any -SYNC command in the worklist resets the count of -SQL commands to zero. -SYNC commands that this keyword generates are in addition to the -SYNC commands that Analysis automatically generates.

SYSCMAX The SYSCOPY threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

SYSCMAXU The SYSCOPY secondary, or alternate, unit that is used for any overflow.

SYSCPREF='&&PREFIX..&&SSID..&&OBNOD'
Defines the default SYSCOPY data set prefix. The &&OBNOD symbolic variable resolves to database.&SPNAME. &SPNAME resolves to a table space name or to an index space name, depending on the type of object that is being copied.

SYSCPS=10 Defines the default SYSCOPY primary space allocation.

SYSCSS=2 Defines the default SYSCOPY secondary space allocation.

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SYSCUNIT=SYSDA Defines the default SYSCOPY unit.

SYSRMAX The SYSREC threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

SYSRMAXU The SYSREC secondary, or alternate, unit that is used for any overflow.

SYSRPREF='&&PREFIX..&&SSID..&&WORKID8'
Defines the default SYSREC data set prefix.

SYSRPS=10 Defines the default SYSREC primary space allocation.

SYSRSS=2 Defines the default SYSREC secondary space allocation.

SYSRUNIT=SYSDA Defines the default SYSREC unit.

SYSTYPE=S Defines the installation's character set.

M mixed
S single-byte only

SZDEVT=3380 The device type for data set sizing for JCLGEN. Valid values are 3380 and 3390. The default is 3380.

TABLEACC=Y For DB2 Version 5.1 and later, indicates whether all tables remain accessible during execution (**Y** or **N**).

TABLEALL=N For DB2 Version 5.1 and later, specifies the STATS utility to gather information for all columns of tables.

N Do not include the TABLE(ALL) parameter on stand-alone stats runs.
Y Include the TABLE(ALL) parameter on stand-alone stats runs.

TAPE1=CART, TAPE2=TAPE, TAPE3=TAPE
Defines the valid installation tape unit names for your site.

TIMEPARM Indicates the TIME limit in minutes for each step in a batch job stream.

TSOSX=N Specifies whether your site uses the TSO Submit exit to supply the job statements at submit time (**Y** or **N**).

UNLDCOLL=N Explicit column list that is required on all BMC Software UNLOAD PLUS unloads (**Y** or **N**).

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UNLDEMPT=Y For DB2 Version 5.1 and later, specifies whether the tables that RUNSTATS indicates as empty are unloaded.

UPDSTATS=C For DB2 Version 5.1 and later, specifies which statistics are updated. The DOPTs parameters are defined as follows:

- **A** All—The DASD tables and the DB2 Catalog tables are updated. BMCSTATS is selected.
- **B** BMC DASD tables—Only the DASD tables are updated. BMCSTATS is selected.
- **C** DB2 Catalog—Only the DB2 Catalog tables are updated. RUNSTATS is selected.

UTILCOPY=N Determines whether other utilities or a copy utility creates an image copy during loads.

- **Y** Image copies are created by utilities other than the copy utilities whenever possible. If the utilities cannot create a copy, a separate copy step is generated.
- **N** A separate copy step generates all copies that the specific copy utility takes (either the IBM COPY utility or the BMC Software COPY PLUS utility).

VVALPROP=N Specifies whether text propagation for extended views is supported by ALTER or CHANGE MANAGER (**Y** or **N**).

VRM=*vrmmd* Indicates the version, release level, maintenance level, and DB2 exploited version (where B indicates version 3.1, C indicates version 4.1, D indicates version 5.1, and E indicates version 6.1 or later).

WDC The Data Facility Storage Management Subsystem (DFSMS or SMS) data class name, used at data set allocation time, to define the allocation attributes of the data set. A data class name is not required, even for SMS data sets. WDC will appear as `"DATACLAS= "` in the JCL for workfiles.

WDSN='''&&PREFIX..&&SSID..&&WORKID'''
Defines the default data set name for a worklist that Analysis generates.

WLPS=15 Defines the default primary space allocation for the worklist in 3120-byte blocks.

WLSS=5 Defines the default secondary space allocation for the worklist in 3120-byte blocks.

WLU=SYSDA Defines the default worklist unit.

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WMC The SMS management class name, used at data set allocation time, to define the migration, retention, and backup requirements of the data set. WMC will appear as `"MGMTCLAS= "` in the JCL for workfiles.

WPS=10 Defines the default work data set primary space allocation.

WSC The SMS storage class name, used at data set allocation time, to define the processing requirements of the data set. WSC will appear as `"STORCLAS= "` in the JCL for non-tape workfiles.

WSS=2 Defines the default secondary space allocation for the work data set.

WU=SYSDA Defines the default work data set unit.

Post-Installation Considerations

After installation, refer to Chapter 4, “Performing Post-Installation Tasks,” for information about how to perform post-installation tasks for ALTER. To perform any additional post-installation tasks or to set up ALTER, refer to the *ALTER and CHANGE MANAGER for DB2 User Guide*.

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Chapter 6 Installing CATALOG MANAGER

This chapter presents the following topics:

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    Installation Defaults 6-3
    Implementing Catalog Indirection 6-3
Controlling Access 6-5
Default Option Listing (DOPTs) 6-6
Default Option Descriptions 6-11
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Overview

This chapter provides information about how to prepare to install the BMC Software CATALOG MANAGER for DB2 product. The CATALOG MANAGER product facilitates the day-to-day tasks that are associated with DB2 administration. CATALOG MANAGER lets you access information in a DB2 catalog by generating a list. Then, you can initiate an action on one or more objects in the list. CATALOG MANAGER provides the following major functions:

- creates new DB2 objects by using existing objects as a template
- drops catalog objects with the option to view a dependency list
- logs dropped object structures and their data for recovery purposes
- grants, revokes, and copies authorizations for users or objects
- lists revoked dependencies and reassigns authorizations
- executes BMC Software and DB2 utilities
- builds and issues DB2 commands
- logs user actions for an audit trail
- converts DBRM plans to use packages
- converts packages back to DBRM plans
- lists EXPLAIN command information for SQL tuning
- searches local and remote DB2 subsystem catalogs by using specific search criteria to limit the retrieved object list

You do not need a thorough knowledge of DB2 structures or SQL syntax because CATALOG MANAGER constructs the necessary SQL statements from your input and selections and also maintains the database structures. You choose when and how to execute the SQL statements. You can also store frequently used SQL statements for future use.

For information about CATALOG MANAGER, read the *CATALOG MANAGER for DB2 User Guide*.

You can install the UTILITY MANAGER product when you install CATALOG MANAGER. For information about configuring UTILITY MANAGER, refer to the *UTILITY MANAGER for DB2 Getting Started* manual.

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Installation Considerations

When you use the Install System to install the Administrative Products, the installation process generates a customized installation data set. This data set contains customized jobs that are created to install these products into your specific DB2 environment. One of these jobs establishes the default processing option values. The job name begins with a $ character, followed by a three-character identifier that varies depending on which Install System installation path that you used. The last four characters are always DOPT.

The $*xnn*DOPT member of the installation data set contains an assembly language program with an options macro call that establishes the default processing values. You can tailor the installation of the product, including changing plan names, by editing the default values in the $*xnn*DOPT member.

Installation Defaults

During installation, you can specify names for options modules, synonym qualifiers, command modules, database names, creator names, and collection names. The default values for these names are listed in Table 6-1. In these default values, *v* indicates the version, *r* indicates the release, and *m* indicates the maintenance level.

Table 6-1 CATALOG MANAGER Installation Default Values

Installation Default	Value
Default Options Module	ACTDOPD1
Synonym Qualifier	ACT*vrm*D
Command Module	ACTCOMND
Database Name	BMCACT*vr*
Creator Name	BMCACT*vr*
Collection Name	ACT*vrm*_D_MAIN

Implementing Catalog Indirection

Catalog indirection is an optional method of implementing and maintaining the Administrative Products. To implement catalog indirection, see “Implementing Catalog Indirection” on page 3-20. For information on collection names, see “Collection Names” on page 3-25. For information on collection nicknames, as well as default options, refer to the following sections.

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Collection Nicknames

You can assign a meaningful *nickname* to the collection name. This nickname provides CATALOG MANAGER users with easy-to-remember names of collections.

Table 6-2 shows an example of collection names that are on the test system DB2T that access indirect copies of production systems DB2P1 and DB2P2, and the corresponding nicknames that could be used.

Table 6-2 Examples of CATALOG MANAGER Collection Nicknames

Collection Name	Collection Nickname
ACT621_I_1_MAIN	DB2P1I
ACT621_I_2_MAIN	DB2P2I

The nickname can be up to 13 characters long and cannot contain any blanks.

Default Options Processing

Unlike the other Administrative Products for DB2, CATALOG MANAGER is designed to use a single default options (DOPTs) module for both direct and indirect access.

To implement a single DOPTs module, the installation dialog must process the CATALOG MANAGER DOPTs module differently than the DOPTs module of the other Administrative Products.

The differences are described as follows:

- During catalog indirection installation, the installation dialog prompts you for the creator of the CATALOG MANAGER indirect synonyms, for the indirect collection ID, and for the name of the direct options module. All other DOPTs module information has been previously gathered.

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- During the batch JCL assembly step, the DOPTs module assembly step disassembles the existing DOPTs, applies the indirect synonym creator that you specified in the preceding step, and reassembles and links the DOPTs module using the same name. The step also resolves the indirect collection ID that is located in a subsequent BIND package step. Because the installation dialog does not prompt you for this information, it must obtain the information from the existing DOPTs module by disassembling it.

Note: If at any time you regenerate the Catalog Indirect JCL for CATALOG MANAGER and then resume the installation at a step later than the DOPTs module assembly step, the BINDs for the packages will fail because the value of the indirect collection ID is unresolved. You must run the DOPTs assembly step to resolve this value.

Controlling Access

You can restrict access to functions of CATALOG MANAGER through plan authorizations. Plan names have the format *prdvrmyz*, where *prd* is the product code; *vrm* is the version, release, and maintenance level; *y* is the access type; and *z* is the plan function. The following plans are provided with the product:

ACT*vrm*DE—Data Editor

This plan enables access to the data editing and browsing functions.

ACT*vrm*DH—Utility Status Display

This plan enables display of BMC Software utilities status. Grant EXECUTE authority on this plan to users who should be able to display or terminate BMC Software utilities.

ACT*vrm*DK—Command Generation and Execution

Grant EXECUTE authority on this plan to users who should be able to issue DB2 operator commands, such as START, STOP, DISPLAY, and TERM.

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ACT*vrm*DL—Log Table Maintenance

Grant EXECUTE authority on this plan to users who are responsible for administering CATALOG MANAGER. This plan includes authority to browse and archive rows in the CATALOG MANAGER Audit, Session, and Drop Recovery logs.

ACT*vrm*DM—Display DB2 Catalog and SQL Information

This plan allows the minimum access that is required to use CATALOG MANAGER. It displays DB2 catalog and SQL generation and execution information.

ACT*vrm*DU—Grant Authorities and Submit BMC Software Utilities or DB2 Utilities

This plan enables generation and submission of JCL for BMC Software utilities and DB2 utilities. Grant EXECUTE authority on this plan to users who should be able to grant authorities or submit DB2 or BMC Software utilities.

Default Option Listing (DOPTs)

This section provides an example of the default options (DOPTs) module listing for CATALOG MANAGER (see Figure 6-1 on page 6-7). The DOPTs listing is created by the Install System and resides in $*xnn*DOPT. The DOPTs listing also resides in *HLQ*.CNTL with the same member name as the DOPTs.

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Figure 6-1 CATALOG MANAGER Default Options Listing (Part 1 of 5)

```
************************************************************************
*
* MODULE NAME : ACTDOPD1
* FUNCTION    : CATALOG MANAGER DEFAULT PROFILE MODULE
* COPYRIGHT   : COPYRIGHT BMC SOFTWARE INC., 2000
* LEVEL       : RELEASE 6.2 September 2000
* FUNCTIONS   : DEFINE THE DEFAULT PROFILE VARIABLES
*
************************************************************************
************************************************************************
*
*  SECTIONS:
*  ACTDOPTS CSECT
*
************************************************************************
ACTDOPTS CSECT
         $ACTDOPT                                                      *
               SSID=(DBDB,R),                                          *
               GRPAT=,                                                 *
               DB2LO=,                                                 *
               DPT=('.',R),                                            *
               ESC='''',                                               *
               CUP=Y,                                                  *
               HRS=(N,R),                                              *
               TRS=(N,R),                                              *
               CRS=(N,R),                                              *
               DRO=O,                                                  *
               AUDIT=Y,                                                *
               ALLC=N,                                                 *
               DBCS=(N,R),                                             *
               PLP=55,                                                 *
               MAX=300,                                                *
               MPLAN=ACT621DM,                                         *
               LPLAN=ACT621DL,                                         *
               UPLAN=ACT621DU,                                         *
               KPLAN=ACT621DK,                                         *
               HPLAN=ACT621DH,                                         *
               EPLAN=ACT621DE,                                         *
               DPLAN=,                                                 *
               RCCOL=ACT621_D_MAIN,                                    *
               DB2CT=(DBDBCAT,R),                                      *
               ICCOL=,                                                 *
               ICSYC=,                                                 *
               CATOP=Y,                                                *
               SZDEV=(3380,R),                                         *
               PDSN=&&ZUSER..BMCCAT.PRINT,                             *
               WDSN=&&ZUSER..BMCCAT.WORK,                              *
               XDSN=&&ZUSER..BMCCAT.SQLX,                              *
               SDSN=&&ZUSER..BMCCAT.SQLS,                              *
               EDSN=&&ZUSER..BMCCAT.SQLE,                              *
```

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Figure 6-1 CATALOG MANAGER Default Options Listing (Part 2 of 5)

```
   ADSN=&&ZUSER..BMCCAT.ARCHIVE,                                *
   BDSN='''BMCADMN.V621.D61.DBRM''',                            *
   LDSN=&&ZUSER..BMCCAT.SQL,                                    *
   JDSN=&&ZUSER..BMCCAT.UTILITY(),                              *
   COMD=ACTCOMND,                                               *
   UCOMD=,                                                      *
   HDTS=Y,                                                      *
   HDTB=Y,                                                      *
   HDAL=N,                                                      *
   HDIX=Y,                                                      *
   HDSY=N,                                                      *
   HDVW=Y,                                                      *
   HDPL=N,                                                      *
   UJC1='//&&USERID.&&JOBCHAR JOB (ACCT),''&&PGMR'',',          *
   UJC2='// CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),',                *
   UJC3='// NOTIFY=&&USERID',                                   *
   UJC4='//*',                                                  *
   UJC5='//*',                                                  *
   ULL1=('''SYS3.DBDB.DSNEXIT''',R),                            *
   ULL2=('''SYS2.DB2V61M.DSNLOAD''',R),                         *
   UBSTP=('''BMCADMN.V621.D61.LOAD''',R),                       *
   UCSTP=('''BMCUTIL.V62.LOAD''',R),                            *
   URSTP=('''BMCUTIL.V62.LOAD''',R),                            *
   UDSTP=('''BMCUTIL.V62.LOAD''',R),                            *
   UESTP=('''BMCUTIL.V62.LOAD''',R),                            *
   UKSTP=('''BMCUTIL.V62.LOAD''',R),                            *
   UXSTP=('''BMCADMN.V621.D61.LOAD''',R),                       *
   UVSTP=('''BMCUTIL.V62.LOAD''',R),                            *
   ULSTP=('''BMCUTIL.V62.LOAD''',R),                            *
   UUSTP=('''BMCUTIL.V62.LOAD''',R),                            *
   UPSTP=('''BMCADMN.V621.D61.LOAD''',R),                       *
   USDEV=SYSDA,                                                 *
   USWVL=,                                                      *
   USWPR=10,                                                    *
   USWSE=2,                                                     *
   UDEVT=SYSDA,                                                 *
   USRUN=SYSDA,                                                 *
   UWFUN=SYSDA,                                                 *
   UWFVL=,                                                      *
   UWFPR=10,                                                    *
   UWFSE=2,                                                     *
   UWLUN=SYSDA,                                                 *
   UWLVL=,                                                      *
   UWLPR=10,                                                    *
   UWLSE=2,                                                     *
   UCDSP='&&PREFIX..&&SSID..&&OBNOD',                           *
   USCPR=10,                                                    *
   USCSE=2,                                                     *
   URDSP='&&PREFIX..SYSREC',                                    *
   USRPR=10,                                                    *
```

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Figure 6-1 CATALOG MANAGER Default Options Listing (Part 3 of 5)

```
            USRSE=2,                                                *
            UVDSP='&&PREFIX..&&SSID..&&OBNOD',                      *
            UVDEV=SYSDA,                                            *
            UVDPR=10,                                               *
            UVDSE=2,                                                *
            UADSP='&&PREFIX..&&SSID',                               *
            UADEV=SYSDA,                                            *
            UADPR=10,                                               *
            UADSE=2,                                                *
            WLDSN=SYSOUT,                                           *
            AOPTS=(ALUDOPD1,R),                                     *
            BOPTS=(ASUDOPD1,R),                                     *
            TAPE1=CART,                                             *
            TAPE2=TAPE,                                             *
            TAPE3=TAPE,                                             *
            WDC=,                                                   *
            WSC=,                                                   *
            WMC=,                                                   *
            RMAX=,                                                  *
            RMAXU=,                                                 *
            CMAX=,                                                  *
            CMAXU=,                                                 *
            VMAX=,                                                  *
            VMAXU=,                                                 *
            NOWRK='Y',                                              *
            DOPCP='ACP$OPTS',                                       *
            DOPRP='ARU$OPTS',                                       *
            DOPVP='AFR$OPTS',                                       *
            DOPLP='AMU$OPTS',                                       *
            DOPUP='ADU$OPTS',                                       *
            DOPKP='ACK$OPTS'
          $ACTSQLD IPNAMES=STATIC,                                  X
            LOCATIO=STATIC,                                         X
            LULIST=STATIC,                                          X
            LUMODES=STATIC,                                         X
            LUNAMES=STATIC,                                         X
            MODESEL=STATIC,                                         X
            AUXRELS=STATIC,                                         X
            CHECKS=STATIC,                                          X
            CHECKDE=STATIC,                                         X
            COLAUTH=STATIC,                                         X
            COLDIST=STATIC,                                         X
            COLDISS=STATIC,                                         X
            COLSTAT=STATIC,                                         X
            COLUMNS=STATIC,                                         X
            CONSTDE=STATIC,                                         X
            COPY=STATIC,                                            X
            DATABAS=STATIC,                                         X
            DATATYP=STATIC,                                         X
            DBAUTH=STATIC,                                          X
```

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Figure 6-1 CATALOG MANAGER Default Options Listing (Part 4 of 5)

```
                DBRM=STATIC,                                            X
                FIELDS=STATIC,                                          X
                FOREIGN=STATIC,                                         X
                INDEXES=STATIC,                                         X
                INDEXPA=STATIC,                                         X
                INDEXST=STATIC,                                         X
                KEYS=STATIC,                                            X
                LOBSTAT=STATIC,                                         X
                PACKAGE=STATIC,                                         X
                PACKAUT=STATIC,                                         X
                PACKDEP=STATIC,                                         X
                PACKLIS=STATIC,                                         X
                PACKSTM=STATIC,                                         X
                PARMS=STATIC,                                           X
                PKSYSTE=STATIC,                                         X
                PLAN=STATIC,                                            X
                PLANAUT=STATIC,                                         X
                PLANDEP=STATIC,                                         X
                PLSYSTE=STATIC,                                         X
                PROCEDU=STATIC,                                         X
                RELS=STATIC,                                            X
                RESAUTH=STATIC,                                         X
                ROUTINA=STATIC,                                         X
                ROUTINE=STATIC,                                         X
                SCHEMAA=STATIC,                                         X
                STMT=STATIC,                                            X
                STOGROU=STATIC,                                         X
                STRINGS=STATIC,                                         X
                SYNONYM=STATIC,                                         X
                TABAUTH=STATIC,                                         X
                TABLEPA=STATIC,                                         X
                TABLES=STATIC,                                          X
                TABLESP=STATIC,                                         X
                TABSTAT=STATIC,                                         X
                TRIGGER=STATIC,                                         X
                USERAUT=STATIC,                                         X
                VIEWDEP=STATIC,                                         X
                VIEWS=STATIC,                                           X
                VOLUMES=STATIC,                                         X
                USERNAM=STATIC
        LTORG
ACT     $ACTDOPT DSECT=YES,LBL=ACT
*********************************************************************
*
* MODULE NAME      : ACTDOPD1
* DESCRIP NAME     : CATALOG MANAGER DEFAULT PROFILE OPTIONS
* ENTRY INFORMATION: THIS MODULE CONTAINS NO EXECUTABLE CODE
*
*********************************************************************
        END
```

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Figure 6-1 CATALOG MANAGER Default Options Listing (Part 5 of 5)

```
//LKED.SYSIN DD *
  NAME ACTDOPD1(R)
```

Note: The **,R** in the variable syntax indicates that the value specified will refresh the existing value of the variable in the user's ISPF profile data set every time that a user starts the product.

Default Option Descriptions

This section describes the DOPTs listed in Figure 6-1 on page 6-7. In some cases, the default value for the option is listed.

ADSN=&&ZUSER..BMCCAT.ARCHIVE

The name of the data set where you want to store archived log entries. CATALOG MANAGER dynamically allocates the log entries the first time that they are used. (See the *CATALOG MANAGER for DB2 User Guide* for details about log maintenance.) When allocating this data set, use these parameters:

DCB=(LRECL=2044,BLKSIZE=2048,RECFM=VB)

Note: In many installation sites, allocation of data sets is controlled by user-written or third-party routines. If allocation fails, you should use alternate means, such as the Interactive System Productivity Facility (ISPF), to perform the allocations.

ALLC=N Determines whether to display all panel titles, column heads, field prompts, and messages in uppercase characters (**Y** or **N**).

AOPTS=ALUDOPD1 If ALTER or CHANGE MANAGER is installed, the DOPTs name specified with this parameter is used to run a CATALOG MANAGER worklist using the Execution component and the associated plan names.

Note: See also the description for UXSTP.

AUDIT=Y Indicates whether to use audit logging (**Y** or **N**).

AUXRELS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSAUXRELS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

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BDSN The DBRM library that CATALOG MANAGER uses when executing the BIND command.

BOPTS=ASUDOPD1

Indicates whether the DASD MANAGER PLUS product is also installed. If DASD MANAGER PLUS is installed, the DOPTs name specified with this parameter is used to enable the use of the SPACE and STATS commands in CATALOG MANAGER and to run a CATALOG MANAGER worklist using the Execution component and the associated plan names.

Note: These parameters must match the load library and options module name that is used when installing DASD MANAGER PLUS. See also the description for UBSTP.

CATOP=Y Specifies whether to perform the install SYSADM check when CATALOG MANAGER is initialized (**Y** or **N**). Selecting **Y** starts a DB2 trace.

CHECKDE=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSCHECKDEP DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

CHECKS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSCHECKS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

CMAX The SYSCOPY threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0. SYSCMAX is used with JCLGEN only, not with the BMC Software COPY PLUS product's dynamic allocation.

CMAXU The SYSCOPY secondary, or alternate, unit that is used for any overflow.

COLAUTH=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSCOLAUTH DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

COLDIST=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSCOLDIST DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

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COLDISS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSCOLDISTSTATS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

COLSTAT=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSCOLSTATS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

COLUMNS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSCOLUMNS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

CONSTDE=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSCONSTDEP DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

COMD=ACTCOMND

Specifies the name of the CATALOG MANAGER command module. See job $*xnn*COMD in the output JCL file.

COPY=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSCOPY DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

CRS=N Specifies whether issuing the SET PROFILE and SET PROFILE OFF commands requires SYSADM (System Administrator) authority (**Y** or **N**).

CUP=Y The conditional uppercase indicator.

Y Translate delimited identifiers to uppercase.
N Do not translate delimited identifiers to uppercase.

DATABAS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSDATABASE DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

DATATYP=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSDATATYPES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

DB2CT=DBDBCAT The VSAM CATALOG alias that contains the data sets of the DB2 catalog.

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DB2LO The DB2 subsystem location name.

DBAUTH=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSDBAUTH DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

DBCS=N Indicates if DB2 subsystem character strings can contain either a mixture of SBCS and DBCS data or SBCS data only.

Y SBCS and DBCS data
N SBCS data only

DBRM=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSDBRM DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

DOPCP=ACP$OPTS Specifies the name of the COPY PLUS product's DOPTs module that CATALOG MANAGER uses to interact with COPY PLUS. This parameter is used only if COPY PLUS is installed.

DOPKP=ACK$OPTS Specifies the name of the BMC Software CHECK PLUS for DB2 product's DOPTs module that CATALOG MANAGER uses to interact with CHECK PLUS. This parameter is used only if CHECK PLUS is installed.

DOPLP=AMU$OPTS Specifies the name of the BMC Software LOADPLUS for DB2 product's DOPTs module that CATALOG MANAGER uses to interact with LOADPLUS. This parameter is used only if LOADPLUS is installed.

DOPRP=ARU$OPTS Specifies the name of the BMC Software REORG PLUS for DB2 product's DOPTs module that CATALOG MANAGER uses to interact with REORG PLUS. This parameter is used only if REORG PLUS is installed.

DOPUP=ADU$OPTS Specifies the name of the BMC Software UNLOAD PLUS for DB2 product's DOPTs module that CATALOG MANAGER uses to interact with UNLOAD PLUS. This parameter is used only if UNLOAD PLUS is installed.

DOPVP=AFR$OPTS Specifies the name of the BMC Software RECOVER PLUS for DB2 product's DOPTs module that CATALOG MANAGER uses to interact with RECOVER PLUS. This parameter is used only if RECOVER PLUS is installed.

DPLAN The DATA PACKER® for DB2 plan. If installed, CATALOG MANAGER can use the AMEND and TRIAL command features.

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DPT=('.') The decimal point character for CATALOG MANAGER must be a comma or a period.

DRO=O The Drop Recovery option:

M	mandatory
O	optional
N	not used

EDSN=&&ZUSER..BMCCAT.SQLE
The name of the SQL Explorer product's errors listing.

EPLAN=ACT*vrm*DE
The name of the plan that enables access to the data editing and browsing functions.

ESC='''' The SQL string delimiter. This must be an apostrophe (') or a quotation mark ("). You must select the one that matches the way your DB2 system was generated. The character that you do not select becomes the SQL escape character.

FIELDS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSFIELDS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

FOREIGN=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSFOREIGNKEYS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

GRPAT The group attach name for data sharing in a Sysplex. This name is used as the SSID when JCL for utilities is generated.

HDAL=N Indicates whether to include aliases in the hierarchical describe (**Y** or **N**).

HDIX=Y Indicates whether to include indexes in the hierarchical describe (**Y** or **N**).

HDSY=N Indicates whether to include synonyms in the hierarchical describe (**Y** or **N**).

HDTB=Y Indicates whether to include tables in the hierarchical describe (**Y** or **N**).

HDTS=Y Indicates whether to include table spaces in the hierarchical describe (**Y** or **N**).

HDVW=Y Indicates whether to include views in the hierarchical describe (**Y** or **N**).

HDPL=N Indicates whether to include plans in the hierarchical describe (**Y** or **N**).

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HPLAN=ACT*vrm*DH The plan for displaying BMC Software utility status.

HRS=N Specifies whether all CATALOG MANAGER users can use the HEX command or only those users with DB2 SYSADM authority.

Y only users with DB2 SYSADM authority
N all users

ICCOL This DOPT is no longer used.

ICSYC The CATALOG MANAGER synonym creator ID that is used when installing catalog indirection for CATALOG MANAGER.

JDSN=&&ZUSER..BMCCAT.UTILITY
The default data set name that is used for utility JCL. This option can be either a sequential or partitioned data set. A member name is not allowed for a partitioned data set. The product automatically uses the utility name as the default member name.

INDEXES=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSINDEXES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

INDEXPA=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSINDEXPART DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

INDEXST=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSINDEXSTATS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

IPNAMES=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSIPNAMES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

KEYS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSKEYS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

KPLAN=ACT*vrm*DK The name of the DB2 commands plan.

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LDSN=&&ZUSER..BMCCAT.SQL

The name of the SQL output data set. CATALOG MANAGER dynamically allocates the data set the first time that it is used. When allocating this data set, use these parameters:

DCB=(LRECL=4092,BLKSIZE=4096,RECFM=VB)

Note: In many installations, allocation of data sets is controlled by user-written or third-party routines. If allocation fails, you should use alternate means, such as ISPF, to perform the allocations.

LOBSTAT=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSLOBSTATS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

LOCATIO=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.LOCATIONS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

LPLAN=ACT*vrm*DL The name of the CATALOG MANAGER logs maintenance plan.

LULIST=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.LULIST DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

LUMODES=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.LUMODES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

LUNAMES=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.LUNAMES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

MAX=300 The maximum number of lines to generate in a list.

MODESEL=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.MODESELECT DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

MPLAN=ACT*vrm*DM The name of the CATALOG MANAGER main plan.

NOWRK=Y Overrides a blank NOWORKDDN parameter for REORG PLUS (**Y** or **N**).

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PACKAGE=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPACKAGE DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PACKAUT=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPACKAUTH DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PACKDEP=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPACKDEP DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PACKLIS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPACKLIST DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PACKSTM=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPACKSTMT DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PARMS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPARMS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PDSN=&&ZUSER..BMCCAT.PRINT

The name of the print output data set. CATALOG MANAGER dynamically allocates this data set the first time that it is used. When allocating this data set, use these parameters:

DCB=(LRECL=133,BLKSIZE=1330,RECFM=FBA)

Note: In many installations, allocation of data sets is controlled by user-written or third-party routines. If allocation fails, you should use alternate means, such as ISPF, to perform the allocations.

PKSYSTE=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPKSYSTEM DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

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PLAN=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPLAN DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PLANAUT=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPLANAUTH DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PLANDEP=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPLANDEP DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PLP=55 The number of print lines per page for the PRINT commands.

PLSYSTE=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPLSYSTEM DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

PROCEDU=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSPROCEDURES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

RCCOL=ACT*vrm*_D_MAIN
CATALOG MANAGER collection ID for direct catalog access.

RELS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSRELS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

RESAUTH=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSRESAUTH DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

RMAX The SYSREC threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

RMAXU The SYSREC secondary, or alternate, unit that is used for any overflow.

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ROUTINA=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSROUTINEAUTH DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

ROUTINE=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSROUTINES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

SCHEMAA=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSSCHEMAAUTH DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

SDSN=&&ZUSER..BMCCAT.SQLS
The name of the SQL Explorer summary listing.

SSID=DB2 The DB2 subsystem ID. The SSID must match the -SSID command in the worklist. This parameter is required.

STMT=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSSTMT DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

STOGROU=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSSTOGROUP DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

STRINGS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSSTRINGS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

SYNONYM=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSSYNONYMS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

SZDEV=3380 The device type for data set sizing for JCLGEN. Valid values are 3380 and 3390. The default is 3380.

TABAUTH=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSTABAUTH DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

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TABLEPA=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSTABLEPART DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

TABLES=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSTABLES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

TABLESP=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSTABLESPACE DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

TABSTAT=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSTABSTATS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

TAPE1=CART, TAPE2=TAPE, TAPE3=TAPE
Defines the valid installation tape unit names for your site.

TRIGGER=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSTRIGGERS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

TRS=N Specifies whether all users, or just users with DB2 SYSADM authority, can terminate utilities.

Y Only users with DB2 SYSADM authority can terminate utilities.
N Any user can terminate the utility.

UADEV=SYSDA The ARCHIVE device type.

UADPR=10 The size of the ARCHIVE primary space.

UADSE=2 The size of the ARCHIVE secondary space.

UADSP='&&PREFIX..&&SSID'
The prefix to be used with the last qualifier of ARCHIVE data sets.

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UBSTP The DASD MANAGER PLUS load library. If you are installing DASD MANAGER PLUS together with CATALOG MANAGER, type the name of the DASD MANAGER PLUS load library. Otherwise, comment out the library name.

Note: These parameters must match the load library and options module name that is used when installing DASD MANAGER PLUS. See also the description for BOPTS.

UCDSP='&&PREFIX..&&SID..&&OBNOD'
The prefix to be used with the last qualifier of SYSCO*nnn* data sets. The &&OBNOD symbolic variable resolves to database.&SPNAME. &SPNAME resolves to a table space name or to an index space name, depending on the type of object that is being copied.

UCOMD *(optional)* The user command table.

UCSTP The name of the COPY PLUS product's load library. If you are installing COPY PLUS together with CATALOG MANAGER, type the name of the COPY PLUS load library. Otherwise, comment out the library name.

UDEVT=SYSDA The name of the copy device type.

UDSTP The DATA PACKER load library. If you are installing DATA PACKER together with CATALOG MANAGER, type the name of the DATA PACKER load library. Otherwise, comment out the library name.

UESTP The DATA PACKER EDITPROC load library.

UJC1='//&&USERID.&&JOBCHAR JOB (ACCT),''&&PGMR'','

UJC2='// CLASS=A, MSGCLASS=X, MSGLEVEL=(1,1),'

UJC3='// NOTIFY=&&USERID'

UJC4='//*'

UJC5='//*'
Five default job statements for your installation. Set unused statements to comments (//*) or null.

UKSTP The CHECK PLUS product's load library. If you are installing CHECK PLUS together with CATALOG MANAGER, type the name of its load library. Otherwise, comment out the library name.

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ULL1=('''SYS1.DSNEXIT'''),ULL2=('''SYS1.DSNLOAD''')
Load library DD statements for DB2 utility execution. Most installations require only ULL1. If your installation uses two load libraries, type the name of the second library in ULL2. Otherwise, leave ULL2 set to null. If your installation uses a separate library for exits and non-IBM modules such as EDITPROCs or FIELDPROCs, type the name of this second library in ULL2.

ULSTP The name of the LOADPLUS product's load library.

UPLAN=ACT*vrm*DU The name of the utilities plan.

UPSTP The SQL Explorer load library. If you are installing SQL Explorer together with CATALOG MANAGER, type the name of its load library. Otherwise, comment out the library name.

URDSP='&&PREFIX..SYSREC'
The prefix to be used with the last qualifier of SYSRE*nnn* data sets.

URSTP The name of the REORG PLUS product's load library. If you are installing REORG PLUS together with CATALOG MANAGER, type the name of the REORG PLUS load library. Otherwise, comment out the library name.

USCPR=10 The size of the SYSCOPY primary space.

USCSE=2 The size of the SYSCOPY secondary space.

USDEV=SYSDA The name of the sort device type.

USERAUT=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSUSERAUTH DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

USERNAM=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.USERNAMES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

USRPR=10 The size of the SYSREC primary space.

USRSE=2 The size of the SYSREC secondary space.

USRUN=SYSDA The name of the SYSREC device type.

USWPR=10 The size of the sort work primary space.

USWSE=2 The size of the sort work secondary space.

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USWVL The name of the work log volume.

UUSTP The name of the UNLOAD PLUS product's load library.

UVDEV=SYSDA The recovery device type.

UVDPR=10 The size of the recovery primary space.

UVDSP='&&PREFIX..&&SSID..&&OBNOD'
The prefix to be used with the last qualifier of RECV*nnn* data sets. The &&OBNOD symbolic variable resolves to database.&SPNAME. &SPNAME resolves to a table space name or to an index space name, depending on the type of object that is being copied.

UVDSE=2 The size of the recovery secondary space.

UVSTP The name of the RECOVER PLUS product's load library.

UWFPR=10 The size of the work file primary space.

UWFSE=2 The size of the work file secondary space.

UWFUN=SYSDA The name of the work file device type.

UWFVL The name of the work file volume.

UWLPR=10 The size of the work log primary space.

UWLSE=2 The size of the work log secondary space.

UWLUN=SYSDA The name of the work log device type.

UWLVL The name of the work log volume.

UXSTP The name of the library where the Execution component of DASD MANAGER PLUS or ALTER is installed. This option applies only if you have DASD MANAGER PLUS or ALTER installed. As part of the installation of DASD MANAGER PLUS or ALTER, the AEX libraries may have been copied into the DASD MANAGER PLUS or ALTER load libraries.

VIEWDEP=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSVIEWDEP DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

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VIEWS=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSVIEWS DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

VMAX The offsite-copy threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

VMAXU The offsite copy secondary, or alternate, unit that is used for any overflow.

VOLUMES=STATIC Specifies whether CATALOG MANAGER uses static SQL or dynamic SQL to access the SYSIBM.SYSVOLUMES DB2 catalog table. The default STATIC uses the privileges of the package owner. DYNAMIC uses the privileges of the person who is listing the table.

WDC The Data Facility Storage Management Subsystem (DFSMS or SMS) data class name, used at data set allocation time to define the allocation attributes of the data set. A data class name is not required, even for SMS data sets. WDC will appear as `"DATACLAS= "` in the JCL for workfiles.

WDSN=&&ZUSER..BMCCAT.WORK
The default worklist data set name for a new Work ID. CATALOG MANAGER dynamically allocates the name the first time that it is used. This data set name can be overridden on the Analysis Interface panel. This data set can be either a sequential file or a partitioned data set (PDS).

WLDSN=SYSOUT The name of the worklog data set.

Note: In many installation sites, allocation of data sets is controlled by user-written or third-party routines. If allocation fails, you should use alternate means, such as ISPF, to allocate the data sets.

WMC The SMS management class name, used at data set allocation time to define the migration, retention, and backup requirements of the data set. WMC will appear as `"MGMTCLAS= "` in the JCL for workfiles.

WSC The SMS storage class name, used at data set allocation time to define processing requirements of the data set. WSC will appear as `"STORCLAS= "` in the JCL for non-tape work files.

XDSN=&&ZUSER.BMCCAT.SQLX
The name of the SQL Explorer report.

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Post-Installation Considerations

After installation, refer to Chapter 4, “Performing Post-Installation Tasks,” for information about how to perform post-installation tasks for CATALOG MANAGER.

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Chapter 7 Installing CHANGE MANAGER

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Overview

This chapter provides information about how to prepare to install the BMC Software CHANGE MANAGER for DB2 product. The CHANGE MANAGER product provides management of application data structure definitions and application data over multiple DB2 subsystems. It is a comprehensive tool for managing complex environments in which users can design multiple data structures, install them on multiple DB2 subsystems, vary the structures at each DB2 location to meet local requirements, and implement version upgrades over the life of the application. CHANGE MANAGER provides the following major functions:

- changes data structures
- copies data structures within the same DB2 subsystem
- migrates data structures
- migrates changes that are made to data structures
- undoes changes that are made to data structures
- recovers structures and data to a prior state
- records changes that are made to data structures
- interacts with data modeling (CASE) tools
- feeds back changes that are made at the receiving DB2 subsystem to the sending DB2 subsystem

CHANGE MANAGER provides full management support for the same set of data structures as the ALTER product:

- storage group
- database
- table space
- table
- check constraint (DB2 Version 4.1 and later)
- foreign key
- index
- view
- trigger (DB2 Version 6.1 and later)
- alias
- synonym

When you use CHANGE MANAGER to specify any of these objects for change, CHANGE MANAGER automatically propagates the change as needed for any dependent objects. CHANGE MANAGER restores all data, dependencies, and authorizations, and supports a large number of data type conversions.

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CHANGE MANAGER is able to use the BMC Software LOADPLUS, UNLOAD PLUS, CHECK PLUS, REORG PLUS, RECOVER PLUS, and COPY PLUS utilities to speed up the execution of structure changes and migrations.

Refer to “Installation Considerations” on page 7-5 for specific considerations and requirements for this product.

For information about CHANGE MANAGER, read the *ALTER and CHANGE MANAGER for DB2 User Guide*.

CM/PILOT Component

The CM/PILOT (CM/P®) component of CHANGE MANAGER allows you to automate DB2 change management tasks that are normally performed through the CHANGE MANAGER Front End. With CM/P, you do not need to decide which CHANGE MANAGER Front End panels are required for your task and in what sequence you need to complete them—CM/PILOT guides you with its ISPF dialog.

Predefined Scripts

The CM/PILOT dialog is based on predefined steps called Scripts. Each Script contains ordered steps that prompt you for only the information that is required to perform the change management task. You also have the capability to modify various settings in each Script. CM/PILOT contains the following scripts:

- change data structures using a Compare trigger
- change data structures using a DML trigger
- migrate data structures using a DML trigger
- change data structures using an existing Work ID
- migrate data structures using an existing Work ID
- receive data structure changes (strong sender)
- receive data structure changes (strong receiver)
- receive DDL to create data structures
- create a full-recovery baseline
- recover data structures with current data
- recover data structures with old data

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The dialog for two of the Scripts helps you create SQL-like data manipulation language (DML) statements to change (update and delete capabilities) and to migrate data structures. You can also modify the DML statements in an ISPF edit session provided by CM/P. Using DML gives you functions similar to the CHANGE MANAGER Specification component, except you can change or migrate multiple data structures in a single DML statement.

Three of the Scripts use triggers, which are conditions that result in the remaining Script steps being executed if the trigger condition is true. For the Compare trigger, you specify the trigger in the form of a comparison. For the DML triggers, you specify the triggers in the WHERE clause of the DML statement.

The information that you provide through the CM/PILOT dialog is stored in a Task ID, which is a unit of work with a unique identifier. CM/PILOT provides the dialog for the creation and maintenance tasks that are associated with Task IDs. You can also reuse Task IDs for change management jobs that you run repeatedly.

CM/PILOT Applications

You can associate a group of CHANGE MANAGER profiles that will be used repeatedly for the change management tasks of a specific DB2 application. This feature is called a CM/PILOT Application. You can also define a Work ID name template in a CM/PILOT Application, which lets you standardize naming conventions for CHANGE MANAGER Work IDs that CM/PILOT creates. There is no limit to the number of Task IDs that can use a CM/PILOT Application.

CM/PILOT Worklists

A CM/PILOT worklist, which contains commands for CHANGE MANAGER components, is created when you execute a Task ID. The worklist passes the information that you provide through the CM/PILOT dialog. The JCL for processing the CM/PILOT worklist can also be created for you at the same time.

The successful processing of a CM/PILOT worklist results in the creation of a CHANGE MANAGER worklist, along with the associated CHANGE MANAGER Execution JCL to process it. You can then submit the Execution JCL for CHANGE MANAGER worklist processing whenever you like, thereby allowing you to schedule the jobs that actually perform the data structure changes and migrations. Actual data structure changes and migrations occur only when the CHANGE MANAGER worklist is processed.

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Diagnostics

CM/PILOT provides diagnostic output that contains information from the processing of the CM/PILOT worklist. If the Task ID contains DML, an informative DML report is included in the diagnostic output.

If you are using DML and want to evaluate impacts to data structures before actually executing the steps in a Script, you can optionally produce a DML trial report. The CM/PILOT worklist will then contain only the necessary commands to analyze the DML and produce the report.

Installation Considerations

When you use the Install System to install the Administrative Products for DB2, the installation process generates a customized installation data set. This data set contains customized jobs that are created to install these products into your specific DB2 environment. One of these jobs is used to establish the default processing option values. The job name begins with a $ character, followed by a three-character identifier that varies, depending on which Install System installation path that you used. The last four characters are always DOPT.

The $*xnn*DOPT member of the installation data set contains an assembly language program with an options macro call that establishes the default processing values. You can tailor the installation of the product, including changing plan names, by editing the default values in the $*xnn*DOPT member.

Installation Defaults

During installation, you can specify names for options modules, synonym qualifiers, database names, creator names, and collection names. The default values for these names are listed in Table 7-1. In these default values, *v* indicates the version, *r* indicates the release, *m* indicates the maintenance level, and *c* is a character value indicating the DB2 version where B indicates version 3.1, C indicates version 4.1, D indicates version 5.1, and E indicates version 6.1 or later.

Table 7-1 CHANGE MANAGER Installation Default Values (Part 1 of 2)

Installation Default	Value
Default Options Module	ACMDOPD1
Synonym Qualifier	ACM*vrmc*D

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Table 7-1 CHANGE MANAGER Installation Default Values (Part 2 of 2)

Installation Default	Value
Database Name	BMCCM*vrc*
Creator Name	BMCCM*vrc*
Collection Name	ACM*vrmc*_D_MAIN
Server Main Collection Name	ACV*vrm*_D_MAIN

Using INFOBMC in the Compare Component

The CHANGE MANAGER product's Compare component has the capability to use the INFOBMC command if the DASD MANAGER PLUS product is also installed. The INFOBMC command gathers and displays DB2 and DASD MANAGER PLUS statistics in Change Definition Language™ (CDL®).

This feature is available if

- you are installing CHANGE MANAGER and DASD MANAGER PLUS simultaneously
- you have already installed DASD MANAGER PLUS and choose to activate the interfaces

Alternatively, you can edit the Compare BIND JCL that is located in the CNTL data set, add DBRM member ACMCLDM, and then execute the BIND. This method requires that CHANGE MANAGER and DASD MANAGER PLUS already be installed.

Performing a Catalog to Catalog Comparison

The CHANGE MANAGER product's Compare component enables you to perform a catalog to catalog comparison. A catalog to catalog comparison allows you to compare a specified set of DB2 objects from a catalog to DB2 objects of the same type from another catalog. You can also compare objects of the same type within the same catalog.

You can compare DB2 objects using the following catalog combinations:

- local catalog to remote catalog
- remote catalog to local catalog
- remote catalog to remote catalog
- local catalog to local catalog

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Catalog to Catalog Requirements

The following list describes the requirements for performing a catalog to catalog comparison:

- The subsystems whose catalogs are used as input sources must have DB2 Version 3.1 or later installed.
- Remote locations must be defined in the SYSIBM.LOCATIONS table of the local DB2 subsystem and be connected using the distributed data facility (DDF) of DB2. Refer to *IBM DATABASE 2 Universal Database for OS/390 Administration Guide* for instructions on how to define a location name with SYSIBM.LOCATIONS.

  Note: Names for DDF tables for DB2 Version 5.1 have changed.
- CHANGE MANAGER needs to be installed on the local and remote DB2 subsystems. CHANGE MANAGER can be installed either completely or partially on the remote DB2 subsystem.
- CHANGE MANAGER must be at the same version, release, and maintenance level on both DB2 subsystems.

Implementing the Catalog to Catalog Feature

To implement the catalog to catalog Compare feature for local and remote comparisons, you must install CHANGE MANAGER compare components on both the local and the remote subsystems.

Install CHANGE MANAGER on the Local Subsystem with DDF Active

When you install CHANGE MANAGER, the Install System builds synonyms that access the communications database.

Install CHANGE Manager on the Remote Subsystem

The following list describes the options for installing CHANGE MANAGER:

- If the remote subsystem has the same version of DB2 that is installed on the local subsystem, install the same version and release of CHANGE MANAGER on the remote subsystem and select the DDF option.

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If the same naming convention for the collection IDs and plans is used on both subsystems (such as using the defaults from BMC Software, for example), then the CHANGE MANAGER product's catalog to catalog Compare feature is ready to use.

- If you are *not* installing the same version and release level of CHANGE MANAGER on the remote subsystem as you have installed on the local subsystem, perform the following steps:

  1. Install the compare components that are required for the catalog to catalog Compare feature on the remote subsystem.

     A. Edit the ACMC2CO member in the *HLQ*.CNTL data set.

     B. Follow the instructions in the member. The member contains data definition language (DDL) for execution at the remote subsystem via DB2I SPUFI.

  2. Bind the packages and the plan that are needed for the remote subsystem.

     A. Edit the ACMC2CB member in the *HQL*.CNTL data set.

     B. Follow the instructions in the member.

     C. Follow the instructions in ACMC2CG to grant execute on the collection IDs.

     Note: Collection IDs and the compare plan name must be identical on both DB2 subsystems.

- If the remote subsystem has a version of DB2 that is different from the version of DB2 that is installed on the local subsystem, use the following steps as an example for implementing the catalog to catalog Compare feature:

  1. On the subsystem that has DB2 Version 4, install CHANGE MANAGER version *vrm***C** with DDF active. (The variable *vrm* indicates the version, release, and maintenance level.) Use the collection ID ACM*vrm***C**_D_MAIN and the compare plan name CM*vrm***C**DC.

  2. On the subsystem that has DB2 Version 5, install CHANGE MANAGER version *vrm***D** with DDF active. Use the collection ID ACM*vrm***D**_D_MAIN and the compare plan name CM*vrm***D**DC.

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3. On the subsystem that has DB2 Version 5, install the DB2 Version 4 compare components that are required for the catalog-to-catalog Compare feature.

   A. Customize the ACMC2CO, ACMC2CB, and ACMC2CG members of the *HLQ*.CNTL data set, using the JCL for DB2 Version 4 for CHANGE MANAGER.

   B. In the ACMC2CB member, bind the packages using the DB2 Version 4 level DBRMLIB into a collection ID that matches the ID used on DB2 Version 4 (ACM*vrm***C**_D_MAIN).

      The plan name in the ACMC2CB member must match the plan name (CM*vrm***C**DC) that was used on the DB2 Version 4 subsystem.

      Note: On DB2 Version 5, the collection ID and the plan name must differ from those used for the exploitation version of CHANGE MANAGER.

4. Execute the catalog to catalog Compare feature from the DB2 Version 4 subsystem to the DB2 Version 5 subsystem so that the DB2 Version 4 load library, collection ID (packages), and plan are used.

   Note: The Compare1 or Compare2 fields can be set to local or remote.

See the *ALTER and CHANGE MANAGER for DB2 User Guide* for an example of the steps that are required to run a catalog to catalog comparison.

Controlling Access

Maintaining security over the components of CHANGE MANAGER is an important consideration. Executing a worklist usually changes the definitions of your DB2 objects as they are defined in the DB2 system catalog tables. In addition, you can also change data when you perform several different kinds of tasks with CHANGE MANAGER. This section provides the information that you need to set up proper safeguards for access to the CHANGE MANAGER components.

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Plans that are included with CHANGE MANAGER provide access to the Front End, Import, Specification, Analysis, Baseline, Compare, Report, Environment, and Execution components. You can control whether users can access the CHANGE MANAGER interface or each of these components by controlling the authorization that is granted to each of these plans.

Plan names vary depending on the version and release of the product that you are using. ALTER and CHANGE MANAGER plan names have the format *ppvrmcyz*, where *pp* is the product code; *vrm* is the version, release, and maintenance level; *c* is the DB2 level (B indicates version 3.1, C indicates version 4.1, D indicates version 5.1, and E indicates version 6.1 or later); *y* is the access type; and *z* is the plan function.

Note: The *c* character in the syntax *ppvrmcyz* is only used when defining plans for ALTER and CHANGE MANAGER versions 5.2 or later. Earlier versions use the syntax *prdvrmyz*.

Execution component plan names have the format *prdvrmnn*, where *prd* is the product code; *vrm* is the version, release, and maintenance level; and *nn* is a unique plan identifier.

The default plans that are shipped with this release follow, along with their default plan names.

CHANGE MANAGER Specification and Analysis Plans

The following plans are used by the Specification, Analysis, Compare, Import, and Baseline components.

CM*vrmc*DF—Front End Plan

This plan controls access to the CHANGE MANAGER interface. You can use this plan to create and maintain CHANGE MANAGER objects and to perform other Front End functions.

ACV*vrm*DM—Display Catalog and SQL Information

Access to this plan is required to use the GUI for CHANGE MANAGER. This plan displays catalog and SQL generation and execution information.

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CM*vrmc*DI—Import Plan

This plan is provided for use by the Import component of CHANGE MANAGER. You can use this plan to import changes to the CHANGE MANAGER CD tables.

CM*vrmc*DS—Specification Plan

This plan accesses the Specification component of CHANGE MANAGER. You can use this plan to request changes to database objects and data. With access to Specification, you can also search and review groups of objects. Note that while Specification does not allow you to actually perform changes, it does allow you to specify changes and to view existing data structures.

CM*vrmc*DA—Analysis Plan

This plan allows you access to the Analysis component to analyze changes and generate a worklist.

Note, however, that you cannot make actual changes to DB2 objects and data by creating a worklist. The Specification and Analysis plans provide a way for you to *request* and *analyze* changes. For this reason, you can usually place minimum restrictions on the Specification and Analysis programs.

CM*vrmc*DB—Baseline Plan

This plan provides you with the ability to establish and delete baselines. Since baselines (especially full-recovery baselines) contain critical information that is used for database recovery, you should restrict access to this plan to informed users.

CM*vrmc*DC—Compare Plan

Access to this plan provides users with the ability to compare data structure definitions. Since no DB2 data structures are modified, you can usually grant wide access to this plan.

CM*vrmc*DR—Report Plan

Access to this plan provides users with the ability to create baseline reports. You can grant wide access to this plan.

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CM*vrmc*DE—Environment Plan

Access to this plan allows users to invoke the ENVI command to review their system environment. Since this plan is not accessed outside of the other CHANGE MANAGER components, you can usually grant PUBLIC access to this plan. This plan does not control the use of the **ENVI** keyword with batch components.

CHANGE MANAGER Execution Plans

The following plans are used by the Execution component.

AEX*vrm*HA—Execution Monitor Entry (Authorization)

EXECUTE authority on this plan allows users to execute a worklist. You should, therefore, carefully consider who receives authorization to use this plan.

AEX*vrm*HM—Execution Monitor

This plan does not control who has authorization to execute a worklist. It does, however, provide users with the ability to attach to DB2 with alternate authorization IDs for the -AUTH commands. Since this plan does not affect who can run Execution, you may grant PUBLIC authority to this plan.

The Execution plan contains some packages that use dynamic SQL. Some of these packages will cause long-running SQL and may need to be added to your RLST. The packages are described as follows:

- AEXAUNLD is the package that does the unload of data from tables.
- AEXSQLIO is the package that does all worklist -SQL commands, including deletions before a data-only migration -LOAD.
- AEXESTDL is the package that does some of the restart logic before the restart of a -LOAD, including the deleting of previously-loaded rows.

By restricting authorization to run the Execution plans, you can control what change and migrate functions users can perform. Giving wide access to Specification and Analysis while controlling access to the Execution Monitor Entry lets your users run CHANGE MANAGER for training purposes or use it as a system dictionary.

Further control over the Execution component’s authorization switching function is provided by the Execution Security Exit.

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CHANGE MANAGER Object Security

The security features of CHANGE MANAGER provide you with the ability to restrict access to CHANGE MANAGER objects (Work IDs, baseline profiles, and migrate profiles) and to separate projects that access the same set of tables. The ability to maintain the security features is restricted to users who have been granted SELECT and UPDATE authority on the security table, as follows:

tbcreator.V*vr*_CM_SECURITY

The variable *tbcreator* is the CHANGE MANAGER creator ID that is specified at installation, and the variable *vr* is the version and release of CHANGE MANAGER.

Install System GRANTs are only executed on plans and collections. The Install System does not execute GRANTs on tables. If you want non-SYSADM users to be Security Administrators, execute the necessary GRANT SELECT and UPDATE statements.

JSI/JES Interface Installation

The JSI/JES Interface installation consists of several installation options. These options help to define the interface to the MVS Server started task for the specific MVS and JES2 environment in which the server task will be operating. Currently, support for JES3 is not provided.

The installer needs to provide the following information:

- The name of the JES2 macro library data set for that release (typically, this name is `'SYS1.HASPSRC'`).
- The MVS subsystem name that JES2 is using on that system and with which this particular MVS server task will communicate (default of JES2 is provided). The information that is required can be obtained from your local MVS or JES system programmer.
- An MVS subsystem name which the JSI/JES Interface will use. This name should be limited to four characters and reflect the name of the JSI interface that will be used by that particular server started task.

Note: Each MVS server started task should have a unique JSI subsystem name (default of JSI1 is provided). No MVS system configuration changes are required for this parameter definition.

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Once these parameters have been determined, the installation process builds an installation job. This job may assemble a JES Offset module for the specified SP level of JES2 that is using the specified macro library, if necessary. This JES Offset module is then linked into the main JSI/JES interface load module. The installation also updates the MVS Server started task JCL and the server INI file with the subsystem names for both JES2 and the JSI interface.

The MVS Server INI file is a PDS member that contains various parameters that the server uses for initialization. The variables that define the JSI/JES interface in the INI file are:

```
JSI.JESSSID =JES2        JES2 subsystem name
JSI.JSISSID =JSI1        JSI/JES subsystem name
JSI.DLL     =00          JSI/JES main Load module ID
JSI.SPOOLBYOWNER =0      Restrict spool access by owner
```

Default Option Listing (DOPTs)

This section provides an example of the default options (DOPTs) module listing for CHANGE MANAGER (see Figure 7-1 on page 7-15). The DOPTs listing is created by the Install System and resides in $*xnn*DOPT. The DOPTs listing also resides in *HLQ*.CNTL with the same member name as the DOPTs.

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Figure 7-1 CHANGE MANAGER Default Options Listing (Part 1 of 4)

```
*********************************************************************
*
* MODULE      : ACMDOPD1
* FUNCTION    : CHANGE MANAGER for DB2
* COPYRIGHT   : COPYRIGHT BMC SOFTWARE INC., 2000
* LEVEL       : RELEASE 6.2 September 2000
* FUNCTIONS   : DEFINE THE DEFAULT PROFILE VARIABLES
*
*********************************************************************
ACMDOPTS CSECT ,
ACMDOPTS RMODE 24
ACMDOPTS AMODE 24
ACMDOPTS $ALUDOPT PRODUCT='CHANGE MANAGER',                          *
               DATE=&SYSDATC,                                        *
               PC=ACM,                                               *
               VRM=(621E,R),                                         *
               SSID=(DBDB,R),                                        *
               DB2CAT=('DBDBCAT',R),                                 *
               EURO=(N,R),                                           *
               SYSTYPE=S,                                            *
               PIC=N,                                                *
               LOG=N,                                                *
               SL1=('''BMCADMN.V621.D61.LOAD''',R),                  *
               SL2=('''SYS3.DBDB.DSNEXIT''',R),                      *
               SL3=('''SYS2.DB2V61M.DSNLOAD''',R),                   *
               SL4=' ',                                              *
               SL5=' ',                                              *
               ISPSLIB=('''BMCADMN.V621.D61.SLIB''',R),              *
               TSOSX=N,                                              *
               JC1='//&&USERID.&&JOBCHAR JOB (ACCT),''&&PGMR'',',    *
               JC2='// CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),',          *
               JC3='// NOTIFY=&&USERID',                             *
               JC4='//*',                                            *
               JC5='//*',                                            *
               DBRM1=,                                               *
               DBRM2=,                                               *
               DBRM3=,                                               *
               DBRMLIB=N,                                            *
               WU=SYSDA,                                             *
               WPS=10,                                               *
               WSS=2,                                                *
               WDC=,                                                 *
               WSC=,                                                 *
               WMC=,                                                 *
               SWU=SYSDA,                                            *
               SWPS=10,                                              *
               SWSS=2,                                               *
               WDSN='''&&PREFIX..&&SSID..&&WORKID''',                *
               WLU=SYSDA,                                            *
               WLPS=15,                                              *
```

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Figure 7-1 CHANGE MANAGER Default Options Listing (Part 2 of 4)

```
   WLSS=5,                                                    *
   CDLDSN='''&&PREFIX..&&SSID..CDL(CDL)''',                   *
   CDLU=SYSDA,                                                *
   CDLPS=15,                                                  *
   CDLSS=5,                                                   *
   CDLRDSN='''&&PREFIX..COMPARE.REPORT''',                    *
   BRPTDSN='''&&PREFIX..BASELINE.REPORT''',                   *
   JDSN='''&&PREFIX..ANALYSIS(&&WORKID)''',                   *
   JDSNE='''&&PREFIX..EXEC(&&WORKID)''',                      *
   JDSNBG='''&&PREFIX..JCLGEN(&&WORKID)''',                   *
   JDSNC='''&&PREFIX..COMPARE(CMPJCL)''',                     *
   JDSNI='''&&PREFIX..IMPORT(&&WORKID)''',                    *
   JDSNB='''&&PREFIX..BASELINE(&&WORKID)''',                  *
   JDSNBR='''&&PREFIX..BASELINE(BLRPTJCL)''',                 *
   SDSN=SYSOUT,                                               *
   SDSNE=SYSOUT,                                              *
   CMPDIAG=SYSOUT,                                            *
   IMPDIAG=SYSOUT,                                            *
   BASDIAG=SYSOUT,                                            *
   BRPTDIAG=SYSOUT,                                           *
   JDSNCPL='''&&PREFIX..TASKID(&&TASKID)''',                  *
   CPLWDSN='''&&PREFIX..&&SSID..&&TASKID''',                  *
   CPLDIAG=SYSOUT,                                            *
   CATAUDIT=(N,R),                                            *
   CATRECOV=(N,R),                                            *
   SYSRPREF='&&PREFIX..&&SSID..&&WORKID8',                    *
   SYSRUNIT=SYSDA,                                            *
   SYSRPS=10,                                                 *
   SYSRSS=2,                                                  *
   SYSRMAX=,                                                  *
   SYSRMAXU=,                                                 *
   SYSCPREF='&&PREFIX..&&SSID..&&OBNOD',                      *
   SYSCUNIT=SYSDA,                                            *
   SYSCPS=10,                                                 *
   SYSCSS=2,                                                  *
   SYSCMAX=,                                                  *
   SYSCMAXU=,                                                 *
   BLRPPREF='&&PREFIX..&&SSID..&&WORKID8',                    *
   BLRPUNIT=SYSDA,                                            *
   BLRPPS=10,                                                 *
   BLRPSS=2,                                                  *
   RECVPREF='&&PREFIX..&&SSID..&&OBNOD',                      *
   RECVUNIT=SYSDA,                                            *
   RECVPS=10,                                                 *
   RECVSS=2,                                                  *
   RECVMAX=,                                                  *
   RECVMAXU=,                                                 *
   ARCHPREF='&&USERID..&&SSID',                               *
   ARCHUNIT=SYSDA,                                            *
   ARCHPS=10,                                                 *
```

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Figure 7-1 CHANGE MANAGER Default Options Listing (Part 3 of 4)

```
ARCHSS=2,                                                      *
SEQI=050,                                                      *
SYNCPNT=00,                                                    *
AMS=Y,                                                         *
ALLOC=N,                                                       *
STORCLAS=N,                                                    *
DATACLAS=N,                                                    *
MGMTCLAS=N,                                                    *
JCLCLEAN=N,                                                    *
AUTHSW=(N,R),                                                  *
GLID=,                                                         *
DASDMAN=(Y,R),                                                 *
CCSID=(E,R),                                                   *
IXTYPE=(2,R),                                                  *
VVALPROP=(N,R),                                                *
BPOOLTS=BP0,                                                   *
BPOOLIX=BP0,                                                   *
LOCK=X,                                                        *
DISCARDS=(0000,R),                                             *
BMCSTATS=(N,R),                                                *
BMCCOPY=(N,R),                                                 *
BMCCHECK=(N,R),                                                *
BMCLOAD=(N,R),                                                 *
BLDCU=(N,R),                                                   *
BLDBS=(N,R),                                                   *
UTILCOPY=(N,R),                                                *
BMCUNLD=(N,R),                                                 *
REORG=(N,R),                                                   *
REBLD=(I,R),                                                   *
UNLDCOLL=N,                                                    *
SZDEVT=(3380,R),                                               *
STATS=(S,R),                                                   *
UPDSTATS=(C,R),                                                *
TABLEALL=(N,R),                                                *
UNLDEMPT=(Y,R),                                                *
STOPCOMM=(N,R),                                                *
TABLEACC=(Y,R),                                                *
COPYDD01=R,                                                    *
COPYDD02=N,                                                    *
RECVDD01=N,                                                    *
RECVDD02=N,                                                    *
HSMVOL=,                                                       *
LOCATION=,                                                     *
TAPE1=CART,                                                    *
TAPE2=TAPE,                                                    *
TAPE3=TAPE,                                                    *
ATTN=Y,                                                        *
ENVP=CM621EDE,                                                 *
FEP=CM621EDF,                                                  *
SPP=CM621EDS,                                                  *
```

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Figure 7-1 CHANGE MANAGER Default Options Listing (Part 4 of 4)

```
               ANP=CM621EDA,                                          *
               IMP=CM621EDI,                                          *
               CMP=CM621EDC,                                          *
               BASE=CM621EDB,                                         *
               RPTPL=CM621EDR,                                        *
               EPP=AEX621HM,                                          *
               EAP=AEX621HA,                                          *
               EIP=DCIINSTL,                                          *
               ASUDOPT=ASUDOPD1,                                      *
               ACTDOPT=ACTDOPD1,                                      *
               ACVPLAN=ACV621DM,                                      *
               DEFERUIX='N'
         END
//LKED.SYSIN DD *
  NAME ACMDOPD1(R)
```

Note: The **,R** in the variable syntax indicates that the value specified will refresh the existing value of the variable in the user's ISPF profile data set, if the timestamp of the DOPTS is later than that in the user's ISPF profile member.

Default Option Descriptions

This section describes the DOPTs listed in Figure 7-1 on page 7-15. In some cases, the default value for the option is listed.

ACTDOPT=ACTDOPD1

The name of the CATALOG MANAGER product's DOPTs module that the GUI for CHANGE MANAGER will use to interact with CATALOG MANAGER. This parameter is used only if CATALOG MANAGER is installed.

ACVPLAN=ACV*vrm*DM

The main DB2 plan for the GUI for CHANGE MANAGER.

ALLOC=N

The allocation units to use for data sets that are managed by System Managed Storage (SMS). If the AMS is set to **Y**, then this option determines how ALTER and CHANGE MANAGER allocate space for VCAT-defined DB2 objects that SMS manages. The DOPTs parameters are as follows:

C cylinders
K kilobytes
M megabytes

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N SMS not in use (default)
T tracks

AMS=Y Controls whether Analysis will, by default, generate AMS statements (IDCAMS DELETE and CREATE) in the worklist. You can use the **INCLUDE (AMS)** keyword to override this value. An entry of **N** generates a worklist -STOP command that allows you to complete the DELETEs and DEFINEs before the CREATEs that are located later in the worklist (**Y** or **N**).

ANP=CM*vrmc*DA Defines the Analysis plan name.

ARCHPPREF='&&USERID..&&SSID'
The high-level qualifier or prefix for data sets that is used for a BMC Software utility archive.

ARCHPS=10 The primary space allocation in cylinders for BMC Software utility archive data sets.

ARCHSS=2 The secondary space allocation in cylinders for BMC Software utility archive data sets.

ARCHUNIT=SYSDA The default UNIT that is used for BMC Software utility archive data sets.

ASUDOPT=ASUDOPD1
The name of the DASD MANAGER PLUS product's DOPTs module that the GUI for CHANGE MANAGER will use to interact with DASD MANAGER PLUS. This parameter is used only if DASD MANAGER PLUS is installed.

ATTN=Y Allows you to press the ATTENTION key to interrupt processing when **ATTN=Y**. This option allows you to stop processing, for example, when building a Mixed List in ALTER or CHANGE MANAGER (**Y** or **N**).

AUTHSW=N Controls the method of authorization-ID switching that Analysis uses.

If you specify **AUTHSW=Y**, -AUTH commands are used in the worklist to switch the authorization ID for subsequent SQL statements and reBINDs. In this mode, you can add -SETS commands to the worklist for setting the authorization ID with SET CURRENT SQLID statements.

If you specify **AUTHSW=N**, -SETS commands are generated for switching the authorization ID, and -AUTH commands are not allowed.

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If you specify **AUTHSW=B**, both -AUTH and -SETS commands are used. -AUTH commands are generated to set the original CREATEDBY values. -SETS commands are generated to set new OWNER values for all objects. The **B** option also causes authorization-ID switching before CREATE TABLE and CREATE INDEX statements, which is not done under either of the other options. When the AUTHSW keyword is used in the ALUIN input stream, it is equivalent to **AUTHSW=Y** in the DOPTs module.

Note: Do not use the AUTHSW keyword in the following situations:

- If **AUTHSW=N** is in the DOPTs module.
- If you are using a global authorization ID (GLID).

Note: If your site does not use DB2 secondary AUTHIDs, set **AUTHSW=Y**. Otherwise, set **AUTHSW=N**. If you require that the CREATEDBY field in the DB2 catalog remain unchanged after updates, then set **AUTHSW=B**.

Warning! Setting **AUTHSW=B** is not recommended because of a potential security exposure. This exposure exists because the DB2 catalog does not accurately reflect the primary authorization ID of the creator of the objects. If you must set **AUTHSW=B**, use the sample security exit (ALUEUSX1) to avoid the security exposure.

BASDIAG=SYSOUT Sets the default value for the Baseline diagnostic output data set name.

BASE=CM*vrmc*DB Sets the Baseline plan name.

BLDBS=N Determines whether the BMC Software LOADPLUS utility updates catalog statistics for the BMCSTATS utility tables during loads for DB2 Version 4.1 or earlier (**Y** or **N**).

BLDCU=N Determines whether the BMC Software LOADPLUS utility updates statistics in the DB2 catalog during loads for DB2 Version 4.1 or earlier (**Y** or **N**).

BLRPPREF='&&PREFIX...&&SSID..&&WORKID8'
Defines the high-level qualifier, or prefix, that is used for data sets containing data stored for a baseline recovery point.

BLRPPS=10 Defines the primary space allocation in cylinders for baseline recovery point data sets.

BLRPSS=2 Defines the secondary space allocation in cylinders for baseline recovery point data sets.

BLRPUNIT=SYSDA Defines the unit that is used for baseline recovery point data sets.

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BMCCHECK=N Specifies whether to use the BMC Software CHECK PLUS utility in place of the IBM CHECK DATA utility, for checking referential constraint violations in DB2 table spaces (**Y** or **N**).

BMCCOPY=N Specifies whether to use the BMC Software COPY PLUS utility in place of the IBM COPY utility. The DOPTs parameters are defined as follows:

Y Use BMCCOPY.
N Use IBMCOPY.
X Do not include copy operations.
F Do not include copy operations, but do start objects in copy pending status with ACCESS(FORCE).

BMCLOAD=N Indicates whether to use the BMC Software LOADPLUS utility for loads, in place of the IBM LOAD utility (**Y** or **N**).

BMCSTATS=N Indicates whether to use the BMC Software BMCSTATS utility for updating statistics in the DB2 catalog, in place of the IBM RUNSTATS utility (DB2 Version 4.1 or earlier). The DOPTs parameters are defined as follows:

Y Use BMCSTATS.
N Use RUNSTATS.
X Do not generate statistics.

BMCUNLD=N Specifies whether to use the BMC Software UNLOAD PLUS utility in place of ALTER UNLOAD (**Y** or **N**).

BPOOLIX=BP0 Indicates the size of the buffer pool for user indexes. Valid values include BP0 through BP49.

BPOOLTS=BP0 Indicates the size of the buffer pool for user data. Valid values include:

- BP0 through BP49
- BP8K0 through BP8K9
- BP16K0 through BP16K9
- BP32K,BP32K1 through BP32K9

BRPTDIAG=SYSOUT
The default name for the Baseline Report diagnostic output data set.

BRPTDSN='''&&PREFIX..BASELINE.REPORT'''
The default name for the Baseline Report data set name.

CATAUDIT=N The DDL audit logging indicator. If you have CATALOG MANAGER installed, an entry of **Y** causes Execution to log executed DDL statements in the CATALOG MANAGER DDL Audit Log (**Y** or **N**).

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CATRECOV=N The Drop Recovery indicator. This parameter is useful only if you have CATALOG MANAGER installed. Type **Y** if you want execution to save information in the CATALOG MANAGER drop recovery log about objects that are being dropped. ALTER or CHANGE MANAGER logs the information that is required for recovering any object that you drop. You must then use CATALOG MANAGER to recover the objects. See the *CATALOG MANAGER for DB2 Reference Manual* for information about Drop Recovery.

CCSID=E Provides the default encoding scheme for databases created using CHANGE MANAGER.

A ASCII
E EBCDIC

CDLDSN='''&&PREFIX..&&SSID..CDL(CDL)'''
Defines the default data set name for generated Change Definition Language (CDL) statements.

CDLPS=15 Defines the default value for the primary space allocation of the CDL data set.

CDLRDSN='''&&PREFIX..COMPARE.REPORT'''
Defines the default data set name for the CDL Report data set.

CDLSS=5 Defines the default value for the secondary space allocation of the CDL data set.

CDLU=SYSDA Defines the default unit for the CDL data set.

CMP=CM*vrmc*DC Defines the Compare plan name.

CMPDIAG=SYSOUT Defines the default value for the Compare diagnostic output data set.

COPYDD01=R, COPYDD02=N, RECVDD01=N, RECVDD02=N
Defines image copies for the DB2 Copy and the BMC Software COPY PLUS and LOADPLUS utilities.

The DOPTs parameters are defined as follows:

N no
C copy
R register and copy

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These DOPTs control the input keywords to Analysis as follows:

- Local-copy parameters (*parm*s) for the COPYDDN keyword can be COPY01 and COPY02, separated by commas or blanks.
- Remote-copy parameters (*parm*s) for the COPYDDN keyword can be RECV01 and RECV02, separated by commas or blanks.

CPLDIAG=SYSOUT The default name for the CM/PILOT component's diagnostic output data set name.

CPLWDSN='''&&PREFIX..&&SSID..&&TASKID'''
The default worklist data set name for a new TASKID used in the CM/PILOT component. The products dynamically allocate the data sets the first time that they are used. This data set name can be overridden on the Analysis Interface panel. This data set can be either a sequential file or a partitioned data set (PDS).

DASDMAN=Y Indicates whether version 5.1 or later of DASD MANAGER PLUS is installed (**Y** or **N**). ALTER and CHANGE MANAGER select DB2 catalog statistics for space estimation. When **DASDMAN=Y**, any statistics from the BMCSTATS tables will be merged.

DATACLAS=N Indicates whether support for the DATACLAS parameter is required for VCAT-defined DB2 objects (**Y** or **N**).

DATE=&SYSDATC This parameter is used only if you have ASMA90 as your assembler.

DB2CAT or DB2CT=('DBDBCAT')
The VSAM CATALOG alias that contains the data sets of the DB2 catalog.

DBRM1, DBRM2, DBRM3
Names the three default DBRM libraries.

DBRMLIB=N Includes the LIBRARY parameter on the BIND statement for plans and packages (**Y** or **N**).

Note: A disadvantage to adding the LIBRARY parameter to the BIND PLAN command is that the order of the libraries on the BIND could be incorrect. If some DBRMs are present in multiple libraries, ALTER and CHANGE MANAGER cannot guarantee that the concatenation will result in every DBRM coming from the correct library.

DEFERUIX=N For DB2 Version 5 and later, enables ALTER and CHANGE MANAGER to create unique indexes with the DEFER YES parameter (**Y** or **N**).

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DISCARDS=*nnnn* Used by ALTER and CHANGE MANAGER to specify the number of discard data sets to allow. The parameter *nnnn* specifies the number of discards in a range from 0 to 9999. DISCARDS=0 means that no maximum number of discards exists.

If the DISCARDS option is set to 1, the product will generate one **//SYSDISC** file for the entire run, and DISCARDS 1 is generated as a LOAD parameter. This action will cause the load utility to terminate with a return code of 8, if any records must be discarded.

If the DISCARDS option is set to anything other than 1, a different discard file will be generated for each LOAD, and DISCARDS *n* will be generated as a LOAD parameter for each LOAD step (where *n* is the maximum number of discards). This action will cause the load to terminate if the discard maximum is reached. If fewer records are discarded, the discard file will contain them and execution will proceed to the next step in the worklist.

EAP=AEX*vrm*HA Defines the Execution Authorization plan name, which determines if a user is authorized to run Execution.

EIP=DCIINSTL Defines the Installation plan name.

ENVP=CM*vrmc*DE Defines the Environment plan name, which is used to display ALTER and CHANGE MANAGER environment information.

EPP=AEX*vrm*HM Defines the Execution primary plan name.

EURO=N Instructs ALTER, CHANGE MANAGER, and DASD MANAGER PLUS to expect numbers in the European format (comma used for the decimal point) and to create output in European decimal format (**Y** or **N**).

This parameter is particularly important when ALTER or CHANGE MANAGER parses index LIMITKEY values that are separated by commas. If the EURO keyword is present, ALTER or CHANGE MANAGER requires delimiting commas to be followed by blanks.

Note: The Import, Specification, Baseline, and Compare components use the value for EURO from the DOPTs module but do not support use of the EURO keyword in the ALUIN parameter input data stream.

FEP=CM*vrmc*DF Defines the Front End plan name.

GLID=*id* Defines a global authorization ID (GLID). This authorization ID is used instead of the authorization ID of the person who submits the Analysis job. The worklist begins with a -GLID command that switches authorization to the GLID.

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HSMVOL=*vol* Specifies the volume ID that indicates an archived data set if you are using a disk management system. If this volume ID is encountered, ALTER or CHANGE MANAGER uses a template of default values for data set allocation.

IMP=CM*vrmc*DI Defines the Import plan name.

IMPDIAG=SYSOUT Defines the default name for the Import diagnostic output data set.

ISPSLIB This value is used by the GUI for CHANGE MANAGER for JCL generation.

IXTYPE=2 For DB2 Versions 4 and 5, the default Index type that ALTER and CHANGE MANAGER use when no type is specified on a create index command.

1 Type 1 index
2 Type 2 index (DB2 Version 4 and later)

JC1='//&&USERID.&&JOBCHAR JOB (ACCT),''&&PGMR'','

JC2='// CLASS=A, MSGCLASS=X,MSGLEVEL=(1,1),'

JC3='// NOTIFY=&&USERID'

JC4='//*'

JC5='//*'

Defines the jobcard that the Front End uses when generating JCL. Symbolic variables can be used and are described in the Symbolic Variable appendix of the respective products' reference manuals.

JCLCLEAN=N Enables you to generate a job step that automatically deletes many of the permanent (also known as non-temporary) data sets that the Execution component creates. These data sets are created during worklist processing and have a disposition (`NEW,CATLG,CATLG`). The automatic delete step is only performed if the condition code that is returned from any previous job step is four or less (**Y** or **N**).

JDSN='''&&PREFIX..ANALYSIS(&&WORKID)'''

Defines the default data set name that is used for Analysis JCL. This data set can be either a sequential or partitioned data set. Hardcoding a member name is not recommended for a partitioned data set. The products automatically use the Work ID as the member name.

JDSNB='''&&PREFIX..BASELINE(&&WORKID)'''

Defines the default data set name that is used for Baseline JCL. This data set can be either a sequential or partitioned data set. Hardcoding a member name is not recommended for a partitioned data set. The product automatically uses the Work ID as the member name.

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JDSNBG='''&&PREFIX..JCLGEN(&&WORKID)'''

For DB2 Version 5 and later, defines the default data set name that is used for batch JCL Generation. This data set can be either a sequential or partitioned data set. Hardcoding a member name is not recommended for a partitioned data set. The products automatically use the Work ID as the member name.

JDSNC='''&&PREFIX..COMPARE(CMPJCL)'''

Defines the default data set name that is used for Compare JCL. This data set can be either a sequential or partitioned data set.

JDSNCPL='''&&PREFIX..TASKID(&&TASKID)'''

The default data set name where the CM/PILOT component places the generated Execution JCL. This data set can be either a sequential or partitioned data set. Hardcoding a member name is not recommended for a partitioned data set. The CM/PILOT component automatically uses the TASK ID as the member name.

JDSNE='''&&PREFIX..EXEC(&&WORKID)'''

Defines the default data set name that is used for Execution JCL. This data set can be either a sequential or partitioned data set. Hardcoding a member name is not recommended for a partitioned data set. The product automatically uses the Work ID as the member name.

JDSNI='''&&PREFIX..IMPORT(&&WORKID)'''

Defines the default data set name that is used for Import JCL. This data set can be either a sequential or partitioned data set. Hardcoding a member name is not recommended for a partitioned data set. The product automatically uses the Work ID as the member name.

JDSNBR='''&&PREFIX..BASELINE(BLRPTJCL)'''

The default data set name where the product places the generated Baseline Report JCL. This data set can be either a sequential or partitioned data set.

LOCATION The local subsystem location. If you are using Single Point Entry, the parameter is set to **SPE_METHOD**.

LOCK=X Controls the SQL LOCK TABLE statements that are issued by the Execution component for ALTER unloads. The LOCK parameter does not apply to the BMC Software UNLOAD PLUS product.

- **S** Issue the SQL LOCK TABLE IN SHARE MODE statement
- **X** Issue the SQL LOCK TABLE IN EXCLUSIVE MODE statement
- **N** Do not issue SQL LOCK TABLE statements

LOG=N Specifies that records be logged during loads that use the IBM LOAD utility (**Y** or **N**).

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MGMTCLAS=N Indicates whether support for the MGMTCLAS parameter is required for VCAT-defined DB2 objects (**Y** or **N**).

PC=ACM Defines the product code to the CHANGE MANAGER components.

PIC=N (Pre-Image Copy) Indicates whether an image copy should be taken of each table space before a database is dropped, a table is dropped, or the table space is dropped or reorganized (**Y** or **N**).

PRODUCT='PRODUCT NAME'
Defines the product name. For example, **PRODUCT = 'CHANGE MANAGER'**.

REBLD=I For DB2 Version 6 and later, specifies whether to use the rebuild utility from IBM or BMC Software or no rebuild utility. If **REBLD=N**, eligible indexes will not be created with DEFER YES. If a non-unique index is being dropped or created in a worklist, and its parent table is not being dropped or created in the worklist, then the index will be created with DEFER YES, if **REBLD=I** or **REBLD=B**.

The DOPTs parameters are defined as follows:

B BMCRECOVER
I IBMREBUILD
N NO REBUILD

RECOV=I For DB2 Version 5 and earlier, specifies whether to use the recover utility from IBM or BMC Software or no recover utility. If **RECOV=N**, eligible indexes will not be created with DEFER YES. If a non-unique index is being dropped or created in a worklist, and its parent table is not being dropped or created in the worklist, then the index will be created with DEFER YES, if **RECOV=I** or **RECOV=B**.

The DOPTs parameters are defined as follows:

B BMCRECOVER
I IBMRECOVER
N NO RECOVER

RECVMAX The offsite copy threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

RECVMAXU The offsite copy secondary, or alternate, unit that is used for any overflow.

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RECVPREF='&&PREFIX..&&SSID..&&OBNOD'
Defines the default prefix (high-level qualifier) that is used for the RECV*nnn* recovery data sets. The &&OBNOD symbolic variable resolves to database.&SPNAME. &SPNAME resolves to a table space name or to an index space name, depending on the type of object that is being copied.

RECVPS=10 Defines the default primary space allocation in cylinders for RECV*nnn* recovery data sets.

RECVSS=2 Defines the default secondary space allocation in cylinders for RECV*nnn* recovery data sets.

RECVUNIT=SYSDA Defines the default unit that is used for creating RECV*nnn* recovery data sets.

REORG=N Indicates whether to generate reorganizations in worklists for operations which require reorganizing table spaces and indexes. Changes to attributes such as PRIQTY, SECQTY, PCTFREE, FREEPAGE, and VOLUME (for VCAT defined partitions) can cause placement of reorganization commands in the worklist. If reorganizations are to be generated, this option also indicates whether to use the BMC Software REORG PLUS product in place of the IBM REORG utility.

- **B** Generate BMC reorganizations in worklists.
- **I** Generate IBM reorganizations in worklists.
- **N** Do not generate reorganizations in worklists (default).

RPTPL=CM*vrmc*DR The name of the CHANGE MANAGER plan that is used to generate reports.

SDSN=SYSOUT The default data set for diagnostic messages for Analysis. This option may be a sequential data set, the keyword SYSOUT, or TERM (terminal). If you use SYSOUT, the diagnostic messages are written to the JES SPOOL. If you use TERM, the diagnostic messages are written to your terminal.

SDSNE=SYSOUT The default data set for diagnostic messages for Execution. This option may be a sequential data set or the keyword SYSOUT. If you use SYSOUT, the diagnostic messages are written to the JES SPOOL.

SEQI=050 Defines the sequence-number increment for worklists and CDL files.

SL1=('''*HLQ*.LOAD''')
The STEPLIB library that contains the BMC Software load modules.

SL2=('''SYS1.DSNEXIT''')
The optional first STEPLIB library for DB2 load modules. This library is concatenated to the library that keyword SL1 specifies.

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SL3=('''SYS1.DSNLOAD''')
The optional second STEPLIB library for DB2 load modules. This library is concatenated to the library that keywords SL1 and SL2 specify.

SL4=('''SYS1.OTHER.LOADLIB1''')
Optional additional STEPLIB libraries.

SL5=('''SYS1.OTHER.LOADLIB2''')
Optional additional STEPLIB libraries.

SPP=CM*vrmc*DS Defines the Specification plan name.

SSID=DB2 Identifies the DB2 subsystem ID (SSID). The SSID must match the -SSID command in the worklist. This parameter is required.

STATS=S Indicates what type of statistics should be generated (DB2 Version 5.1 or later). The DOPTs parameters are defined as follows:

- **S** Standalone—The worklist generates either a -BMCS or -RNST command in the worklist.
- **U** Utility—The worklist combines statistics with a utility (Reorg, Copy, Load) whenever possible.
- **X** No statistics are generated.

STOPCOMM=N For DB2 Version 5.1 and later, indicates whether an AT (COMMIT) generates in a worklist when a STOP is created.

STORCLAS=N Indicates whether support for the STORCLAS parameter is required for VCAT-defined DB2 objects (**Y** or **N**).

SWPS=10 Defines the default primary space allocation for sort work in cylinders.

SWSS=2 Defines the default secondary space allocation for sort work in cylinders.

SWU=SYSDA Describes the sort work unit.

SYNCPNT = *parm* Creates additional -SYNC commands in a worklist, based on the number of -SQL commands since the last -SYNC command. The variable *parm* specifies the maximum number of -SQL commands that can be in the worklist before a -SYNC command is created.

The option also places an additional -SYNC command before the next -SQL command. Valid values for *parm* are from 0 to 99. Any -SYNC command in the worklist resets the count of -SQL commands to zero. -SYNC commands that this keyword generates are in addition to the -SYNC commands that Analysis automatically generates.

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SYSCMAX The SYSCOPY threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

SYSCMAXU The SYSCOPY secondary, or alternate, unit that is used for any overflow.

SYSCPREF='&&PREFIX..&&SSID..&&OBNOD'
Defines the default SYSCOPY data set prefix. The &&OBNOD symbolic variable resolves to database.&SPNAME. &SPNAME resolves to a table space name or to an index space name, depending on the type of object that is being copied.

SYSCPS=10 Defines the default SYSCOPY primary space allocation.

SYSCSS=2 Defines the default SYSCOPY secondary space allocation.

SYSCUNIT=SYSDA Defines the default SYSCOPY unit.

SYSRMAX The SYSREC threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

SYSRMAXU The SYSREC secondary, or alternate, unit that is used for any overflow.

SYSRPREF='&&PREFIX..&&SSID..&&WORKID8'
Defines the default SYSREC data set prefix.

SYSRPS=10 Defines the default SYSREC primary space allocation.

SYSRSS=2 Defines the default SYSREC secondary space allocation.

SYSRUNIT=SYSDA Defines the default SYSREC unit.

SYSTYPE=S Defines the installation's character set.

M mixed
S single-byte only

SZDEVT=3380 The device type for data set sizing for JCLGEN. Valid values are 3380 and 3390. The default is 3380.

TABLEACC=Y For DB2 Version 5.1 and later, indicates whether all tables remain accessible during execution (**Y** or **N**).

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TABLEALL=N For DB2 Version 5.1 and later, specifies the STATS utility to gather information for all columns of tables.

- **N** Do not include the TABLE(ALL) parameter on stand-alone stats runs.
- **Y** Include the TABLE(ALL) parameter on stand-alone stats runs.

TAPE1=CART, TAPE2=TAPE, TAPE3=TAPE
Defines the valid installation tape unit names for your site.

TIMEPARM Indicates the TIME limit in minutes for each step in a batch job stream.

TSOSX=N Specifies whether your site uses the TSO Submit exit to supply the job statements at submit time (**Y** or **N**).

UNLDCOLL=N Explicit column list that is required on all BMC Software UNLOAD PLUS unloads (**Y** or **N**).

UNLDEMPT=Y For DB2 Version 5.1 and later, specifies whether tables that RUNSTATS indicates are empty are unloaded.

UPDSTATS=C For DB2 Version 5.1 and later, specifies which statistics are updated. The DOPTs parameters are defined as follows:

- **A** All—The DASD tables and the DB2 Catalog tables are updated. BMCSTATS is selected.
- **B** BMC DASD tables—Only the DASD tables are updated. BMCSTATS is selected.
- **C** DB2 Catalog—Only the DB2 Catalog tables are updated. RUNSTATS is selected.

UTILCOPY=N Determines whether other utilities or a copy utility creates an image copy during loads.

- **Y** Image copies are created by utilities other than the copy utilities whenever possible. If the utilities cannot create a copy, a separate copy step is generated.
- **N** A separate copy step generates all copies that the specific copy utility takes (either the IBM COPY utility or the BMC Software COPY PLUS utility).

VVALPROP=N Specifies whether text propagation for extended views is supported by ALTER or CHANGE MANAGER (**Y** or **N**).

VRM=*vrmmd* Indicates the version, release level, maintenance level, and DB2 exploited version (where B indicates version 3.1, C indicates version 4.1, D indicates version 5.1, and E indicates version 6.1 or later).

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WDC The Data Facility Storage Management Subsystem (DFSMS or SMS) data class name, used at data set allocation time, to define the allocation attributes of the data set. A data class name is not required, even for SMS data sets. WDC will appear as `"DATACLAS= "` in the JCL for workfiles.

WDSN='''&&PREFIX..&&SSID..&&WORKID'''
Defines the default data set name for a worklist that Analysis generates.

WLPS=15 Defines the default primary space allocation for the worklist in 3120-byte blocks.

WLSS=5 Defines the default secondary space allocation for the worklist in 3120-byte blocks.

WLU=SYSDA Defines the default worklist unit.

WMC The SMS management class name, used at data set allocation time, to define the migration, retention, and backup requirements of the data set. WMC will appear as `"MGMTCLAS= "` in the JCL for workfiles.

WPS=10 Defines the default work data set primary space allocation.

WSC The SMS storage class name, used at data set allocation time, to define the processing requirements of the data set. WSC will appear as `"STORCLAS= "` in the JCL for non-tape workfiles.

WSS=2 Defines the default work data set secondary space allocation.

WU=SYSDA Defines the default work data set unit.

Post-Installation Considerations

After installation, refer to Chapter 4, “Performing Post-Installation Tasks,” for information about how to perform post-installation tasks for CHANGE MANAGER. To perform any additional post-installation tasks or to set up CHANGE MANAGER, refer to the *ALTER and CHANGE MANAGER for DB2 User Guide*.

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Chapter 8 Installing DASD MANAGER PLUS

This chapter presents the following topics:

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Overview

This chapter provides information about how to prepare to install the BMC Software DASD MANAGER PLUS for DB2 product. The DASD MANAGER PLUS product is a comprehensive database management tool that supports DB2 Version 3.1 and later.

DASD MANAGER PLUS

- gathers, stores, and analyzes statistics in a production environment
- monitors changes in the database
- automates utility execution based on the condition of the data
- estimates space requirements
- features support for DB2 Version 5.1
- produces numerous analytical and statistical reports on DB2 objects

DASD MANAGER PLUS gathers and analyzes statistics with BMCSTATS, which collects all the statistics collected by RUNSTATS and STOSPACE, plus many others that can be helpful in administering a database. The statistics that BMCSTATS collects are maintained in a historical database in which each entry is time-stamped. The historical database makes possible trend analysis of DB2 object activity. If installed, the LOADPLUS or REORG PLUS utilities can also provide statistics to the BMCSTATS database.

DASD MANAGER PLUS automates utility execution through BMCTRIG, an analysis tool that examines the BMCSTATS database for almost two dozen exception conditions, such as number of extents. When conditions reach or exceed the trigger values that you specify, DASD MANAGER PLUS can automatically build and submit the appropriate utility job to correct the condition. BMCTRIG lets you generate worklist JCL or standard JCL with its flexibility, familiarity, and easy restarts.

The Space Estimation function simulates changes to the database, so that you can predict the effect of changes to such things as page size, segment size, primary and secondary allocations, number of rows, index type, and average row length.

DASD MANAGER PLUS exploits the advantages of DB2 Version 4.1 and later:

- type 2 indexes
- data sharing across DB2 subsystems
- partition independence for DB2 utilities
- faster LOAD, REORG, and RUNSTATS
- online REORG
- improved queries

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- large table spaces
- new version 4 and version 5 parameters for BMC Software utilities, DB2 utilities, and DB2 commands

This product provides both analytical and statistical reports. The reports provide comprehensive information about space allocation, reorganization, image copies, table spaces, indexes, tables, and storage groups. DASD MANAGER PLUS also provides customizable reports that help you to monitor trends in space utilization and to maintain Work IDs.

For information about DASD MANAGER PLUS, read the *DASD MANAGER PLUS for DB2 User Guide*.

Installation Considerations

When you use the Install System to install the Administrative Products for DB2, the installation process generates a customized installation data set. This data set contains customized jobs that are created to install these products into your specific DB2 environment. One of these jobs is used to establish the default processing option values. The job name begins with a $ character, followed by a three-character identifier that varies, depending on which Install System installation path that you used. The last four characters are always DOPT.

The $*xnn*DOPT member of the installation data set contains an assembly language program with an options macro call that establishes the default processing values. You can tailor the installation of the product, including changing plan names, by editing the default values in the $*xnn*DOPT member.

Installation Defaults

During installation, you can specify names for options modules, synonym qualifiers, database names, creator names and collection names. The default values for these names are listed in Table 8-1. In these default values, *v* indicates the version, *r* indicates the release, and *m* indicates the maintenance level.

Table 8-1 DASD MANAGER PLUS Installation Default Values (Part 1 of 2)

Installation Default	Value
Default Options Module	ASUDOPD1
Synonym Qualifier	ASU*vrm*D

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Table 8-1 DASD MANAGER PLUS Installation Default Values (Part 2 of 2)

Installation Default	Value
Database Name	BMCASU*vr*
Creator Name	BMCASU*vr*
Collection Name	ASU*vrm*_D_MAIN

Implementing the QMF Report Feature

If you want to use the QMF Report feature that is included with DASD MANAGER PLUS, you will need to perform two additional steps to complete the installation. You perform these steps outside the Install System dialog.

1. Build views for the DASD MANAGER PLUS QMF reports.

   To build the necessary views for the DASD MANAGER PLUS QMF reports (supplied with DASD MANAGER PLUS), invoke SPUFI and specify the *HLQ*.CNTL data set and member ASURVIEW.

   Note: If you are installing DASD MANAGER PLUS on multiple DB2 subsystems, execute this SPUFI job for each DB2 SSID where the DASD MANAGER PLUS QMF reports will be used.

2. Import the DASD MANAGER PLUS QMF Reports into QMF.

   - Edit all members of the *HLQ*.QMFPROC data set:

     — Change *HLQ* to the high-level qualifier for DASD MANAGER PLUS data sets at your installation.

     — Change **U******* to the user ID of the person who is running the QMF install.

   - From QMF, execute the following:

     ```
     IMPORT PROC FROM 'HLQ.QMFPROC' (M=LOADPROC)
     ```

     Note: The data set name should be typed in uppercase (capital) letters. The IMPORT command can be executed either from the first panel of QMF or from the Query panel.

3. Run the procedure by pressing **F2** or by entering the RUN command. This action IMPORTs all of the BMC Software-supplied DASD MANAGER PLUS QMF reports.

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Controlling Access

You can restrict access to DASD MANAGER PLUS functions by controlling authorization to various plans. Plan names have the format *prdvrmyz*, where *prd* is the product code; *vrm* is the version, release, and maintenance level; *y* is the access type; and *z* is the plan function.

Execution component plan names have the format *prdvrmnn*, where *prd* is the product code; *vrm* is the version, release, and maintenance level; and *nn* is a unique plan identifier.

The default plans that are shipped with this release follow, along with their default plan names.

DASD MANAGER PLUS Plans

The following plans are used by components of DASD MANAGER PLUS.

ASU*vrm*DC—DB2 Catalog Update

This plan controls access to the operations that update the catalog. Only users with authority to change DB2 catalog statistics should be authorized to use this plan.

ASU*vrm*DD—Object Definition

Note: This plan is for DASD MANAGER 3.2 only.

This plan controls access to the user interface for object definition, utility generation, and statistics display. Any user needing to perform online object-definition tasks should be authorized to use this plan.

ASU*vrm*DJ—BMCTRIG Utility Job Generation

This plan controls access to utility-job generation from BMCTRIG. Any user needing to perform online or BMCTRIG JCL generation should be authorized to use this plan.

ASU*vrm*DR—Report Display

This plan controls access to the display of reports. Any user needing to report events and exceptions online should be authorized to use this plan.

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ASU*vrm*DS—Statistics Collection

This plan controls access to statistics collection. Any user needing to run BMCSTATS should be authorized to use this plan.

ASU*vrm*DX—Cross Reference Utility Access

This plan controls access to the Cross Reference Utility. Any user needing to use this utility should be authorized to use this plan.

ASU*vrm*DZ—Browse DASD MANAGER PLUS Database Statistics

This plan controls access to the Browse function, which displays statistics from the DASD MANAGER PLUS databases. Any user needing to display statistics online should be authorized to use this plan.

You can place minimum restriction on the online programs to allow a user to define objects and to specify and analyze changes. By restricting authorization to run the Execution plans (see next section), you can control which users can actually execute changes. Giving wide access to the online programs but controlling access to the Execution Monitor lets your users run DASD MANAGER PLUS for training purposes or use it as a system dictionary.

DASD MANAGER PLUS Execution Plans

The following plans are used by the Execution component.

AEX*vrm*DA—Execution Monitor Entry (Authorization)

EXECUTE authority on this plan provides a way for users to execute a worklist. You should, therefore, carefully consider who receives authorization to use this plan.

AEX*vrm*DM—Execution Monitor

This plan is used to execute a worklist. It will be accessed only if the user has EXECUTE authority on the AEX*vrm*DA plan. Therefore, you may grant wide authority (PUBLIC) to AEX*vrm*DM.

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Interacting with Other BMC Software Products

The Install System provides interface capabilities to the BMC Software Utility products for the following BMC Software products:

- ALTER
- CATALOG MANAGER
- CHANGE MANAGER
- DASD MANAGER PLUS

See “DASD MANAGER PLUS” on page 3-9 for more information about these interface capabilities.

Default Option Listing (DOPTs)

This section provides an example of the default options (DOPTs) module listing for DASD MANAGER PLUS (see Figure 8-1 on page 8-8). The DOPTs listing is created by the Install System and resides in $*xnn*DOPT. The DOPTs listing also resides in *HLQ*.CNTL with the same member name as the DOPTs.

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Figure 8-1 DASD MANAGER PLUS Default Options Listing (Part 1 of 2)

```
*********************************************************************
*
* MODULE      : ASUDOPD1
* FUNCTION    : DASD DEFAULT OPTIONS
* COPYRIGHT   : COPYRIGHT BMC SOFTWARE INC., 2001
* LEVEL       : RELEASE 6.1 March 2001
* FUNCTIONS   : DEFINE THE DEFAULT PROFILE VARIABLES
*
*********************************************************************
ASUDOPTS $ALUDOPT PRODUCT='DASD MANAGER',                              *
               DATE=&SYSDATC,                                          *
               SSID=(DBDB,R),                                          *
               DB2CAT=('DBDBCAT',R),                                   *
               SYSTYPE=S,                                              *
               SL1=('''BMCADMN.V613.D61.LOAD''',R),                    *
               SL2=('''SYS3.DBDB.DSNEXIT''',R),                        *
               SL3=('''SYS2.DB2V61M.DSNLOAD''',R),                     *
               SL4=' ',                                                *
               SL5=' ',                                                *
               JC1='//&&USERID.&&JOBCHAR JOB (ACCT),''&&PGMR'',',      *
               JC2='// CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),',            *
               JC3='// NOTIFY=&&USERID',                               *
               JC4='//*',                                              *
               JC5='//*',                                              *
               WDSN='''&&PREFIX..&&SSID..&&WKID''',                    *
               WU=SYSDA,                                               *
               WPS=10,                                                 *
               WSS=2,                                                  *
               WDC=,                                                   *
               WSC=,                                                   *
               WMC=,                                                   *
               JDSNE='''&&PREFIX..EXEC(&&WKID)''',                     *
               SWU=SYSDA,                                              *
               SWPS=10,                                                *
               SWSS=2,                                                 *
               SYSRPREF='&&PREFIX..&&WKID',                            *
               SYSRUNIT=SYSDA,                                         *
               SYSRPS=10,                                              *
               SYSRSS=2,                                               *
               SYSRMAX=,                                               *
               SYSRMAXU=,                                              *
               SYSCPREF='&&PREFIX..&&SSID..&&OBNOD',                   *
               SYSCUNIT=SYSDA,                                         *
               SYSCPS=10,                                              *
               SYSCSS=2,                                               *
               SYSCMAX=,                                               *
               SYSCMAXU=,                                              *
               RECVPREF='&&PREFIX..&&SSID..&&OBNOD',                   *
               RECVUNIT=SYSDA,                                         *
               RECVPS=10,                                              *
```

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Figure 8-1 DASD MANAGER PLUS Default Options Listing (Part 2 of 2)

```
                RECVSS=2,                                              *
                RECVMAX=,                                              *
                RECVMAXU=,                                             *
                TAPE1=CART,                                            *
                TAPE2=TAPE,                                            *
                TAPE3=TAPE,                                            *
                DPNAM=DPDELOAD,                                        *
                CATAUDIT=(N,R),                                        *
                CATRECOV=(N,R),                                        *
                JCLCLEAN=(N,R),                                        *
                OPNDB2ID=(Y,R),                                        *
                STATAUTH=(Y,R),                                        *
                GDGDEF=N,                                              *
                GDGLIM=0,                                              *
                SZDEVT=(3380,R),                                       *
                CPLAN=ASU613DC,                                        *
                DPLAN=ASU613DD,                                        *
                JPLAN=ASU613DJ,                                        *
                SPLAN=ASU613DS,                                        *
                XPLAN=ASU613DX,                                        *
                ZPLAN=ASU613DZ,                                        *
                RPLAN=ASU613DR,                                        *
                LOCATION=,                                             *
                EPP=AEX613DM,                                          *
                EAP=AEX613DA,                                          *
                EIP=DCIINSTL,                                          *
                DLHQ='BMCADMN.V613.D61',                               *
                ISPTLIB='BMCADMN.V613.D61.TLIB'
          END
//LKED.SYSIN DD *
  NAME ASUDOPD1(R)
```

Note: The **,R** in the variable syntax indicates that the value specified will refresh the existing value of the variable in the user's ISPF profile data set, if the timestamp of the DOPTS is later than that in the user's ISPF profile member.

Default Option Descriptions

This section describes the DOPTs listed in Figure 8-1 on page 8-8. In some cases, the default value for the option is listed.

CATAUDIT=N The DDL audit logging indicator. If you have CATALOG MANAGER installed, an entry of **Y** causes Execution to log executed DDL statements in the CATALOG MANAGER DDL Audit Log (**Y** or **N**).

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CATRECOV=N The Drop Recovery indicator. This parameter is useful only if you have CATALOG MANAGER installed. Type **Y** if you want execution to save information in the CATALOG MANAGER drop recovery log about objects being dropped. ALTER or CHANGE MANAGER logs the information required for recovering any object that you drop. You must then use CATALOG MANAGER to recover the objects. See the *CATALOG MANAGER for DB2 Reference Manual* for information about Drop Recovery.

CPLAN=ASU*vrm*DC The name of the DASD MANAGER PLUS plan that is used to control DB2 catalog updates.

DATE=&SYSDATC This parameter is used only if you have ASMA90 as your assembler.

DB2CAT='DBDBCAT' The VSAM CATALOG alias that contains the data sets of the DB2 catalog.

DLHQ='*HLQ*' The DASD MANAGER PLUS high-level qualifier that is used to derive DASD MANAGER PLUS ISPF data set names that are dynamically allocated during batch TSO simulation in DASD MANAGER PLUS. For example, if **DLHQ='BMC.ADMIN'**, then **ISPTLIB='BMC.ADMIN.TLIB'**.

DPLAN=ASU*vrm*DD The DATA PACKER for DB2 plan. If installed, CATALOG MANAGER can use the AMEND and TRIAL command features.

DPNAM=DPDELOAD The load module name for the BMC Software DATA PACKER product.

EAP=AEX*vrm*DA Defines the Execution Authorization plan name, which determines if a user is authorized to run Execution.

EIP=DCIINSTL Defines the Installation plan.

EPP=AEX*vrm*DM Defines the Execution primary plan name.

GDGDEF=N Indicates whether JCLGEN creates the base of the Generation Data Group (GDG) data set (**Y** or **N**).

GDGLIM=0 Specifies the number of GDG data sets that are allowed. GDGLIM contains the value of the LIMIT parm. Valid values are from 0 through 255. If GDGLIM is set to 0, then **GDGDEF=N**.

ISPTLIB='*HLQ*.TLIB' The fully-qualified data set name for the ISPF TLIB. This value is used during batch JCL generation.

JCLCLEAN=N Enables you to generate a job step that automatically deletes many of the permanent (also known as non-temporary) data sets that the Execution component creates. These data sets are created during worklist processing and have a disposition (`NEW,CATLG,CATLG`). The automatic delete step is only performed if the condition code that any previous job step returns is four or less (**Y** or **N**).

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JC1='//&&USERID.&&JOBCHAR JOB (ACCT),''&&PGMR'','

JC2='// CLASS=A,MSGCLASS=X, MSGLEVEL=(1,1),'

JC3= '// NOTIFY=&&USERID'

JC4='//*'

JC5='//*' The default JOB statement that DASD MANAGER PLUS uses when generating Analysis and Execution JCL. Symbolic variables can be used and are covered in the Symbolic Variable appendix of the respective products' reference manuals.

JDSNE=''''&&PREFIX..EXEC(&&WKID)'''
Defines the default data set name that is used for Execution JCL. This data set can be either a sequential or partitioned data set. A member name is not allowed for a partitioned data set. DASD MANAGER PLUS automatically uses the Work ID as the member name.

JPLAN=ASU*vrm*DJ The name of the DASD MANAGER PLUS plan that is used for the BMCTRIG utility job generation.

LOCATION The local subsystem location. If you are using Single Point Entry, the parameter is set to **SPE_METHOD**.

OPNDB2ID=Y Uses the DB2 authorization ID to update BMCSTATS tables. The default option, **OPNDB2ID = Y**, allows users with STATS authority to collect stats even if their user IDs do not have RACF authority to read the data set (**Y** or **N**).

PRODUCT='PRODUCT NAME'
Defines the product name. For example, **PRODUCT='DASD MANAGER'**.

RECVMAX The offsite copy threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

RECVMAXU The offsite copy secondary, or alternate, unit that is used for any overflow.

RECVPREF='&&PREFIX..&&SSID..&&OBNOD'
Defines the default prefix (high-level qualifier) that is used for the RECV*nnn* recovery data sets. The &&OBNOD symbolic variable resolves to database.&SPNAME. &SPNAME resolves to a table space name or to an index space name, depending on the type of object that is being copied.

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RECVPS=10 Defines the default primary space allocation in cylinders for RECV*nnn* recovery data sets.

RECVSS=2 Defines the default secondary space allocation in cylinders for RECV*nnn* recovery data sets.

RECVUNIT=SYSDA Defines the default unit that is used for creating RECV*nnn* recovery data sets.

RPLAN=ASU*vrm*DR The name of the DASD MANAGER PLUS plan that is used for displaying online reports.

SL1 The STEPLIB library that contains the BMC Software load modules. You can place DASD MANAGER PLUS load modules in the same library as DB2. Keywords SL1, SL2, and SL3 indicate from what libraries DASD MANAGER PLUS should load DB2 load modules.

SL2=('''SYS1.DSNEXIT''')
The optional first STEPLIB library for DB2 load modules. This library is concatenated to the library that keyword SL1 specifies.

SL3=('''SYS1.DSNLOAD''')
The optional second STEPLIB library for DB2 load modules. This library is concatenated to the library that keywords SL1 and SL2 specify.

SL4=('''SYS1.OTHER.LOADLIB1''')
Optional additional STEPLIB libraries.

SL5=('''SYS1.OTHER.LOADLIB2''')
Optional additional STEPLIB libraries.

SPLAN=ASU*vrm*DS The name of the DASD MANAGER PLUS plan that is used for statistics collection.

SSID=DB2 Identifies the DB2 subsystem ID. The SSID must match the -SSID command in the worklist. This parameter is required.

STATAUTH=Y The statistics authorization indicator. If the indicator is set to **Y** (the default), DASD MANAGER PLUS checks users' authorization to run BMCSTATS and requires the same authorization as for RUNSTATS (**Y** or **N**).

SWPS=10 The primary space allocation in cylinders for sort work data sets.

SWSS=2 The secondary space allocation in cylinders for sort work data sets.

SWU=SYSDA Describes the sort work unit.

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SYSCMAX The SYSCOPY threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0. The SYSCMAX parameter is used to generate SYSCOPY DD statements; it is not used when COPY PLUS Dynamic Allocation is used.

SYSCMAXU The SYSCOPY secondary, or alternate, unit that is used for any overflow.

SYSCPREF='&&PREFIX..&&SSID..&&OBNOD'
The prefix that is used with the last qualifier of SYSCO*nnn* data sets. The &&OBNOD symbolic variable resolves to database.&SPNAME. &SPNAME resolves to a table space name or to an index space name, depending on the type of object that is being copied.

SYSCPS=10 The primary space allocation in cylinders for SYSCO*nnn* data sets.

SYSCSS=2 The secondary space allocation in cylinders for SYSRCO*nnn* data sets.

SYSCUNIT=SYSDA The default UNIT for creating SYSCO*nnn* data sets.

SYSRMAX The SYSREC threshold, in cylinders, above which the utility will use the secondary unit for allocation. If the size of a data set exceeds the threshold, the utility uses the secondary unit. To avoid using the secondary unit, specify 0.

SYSRMAXU The SYSREC secondary, or alternate, unit that is used for any overflow.

SYSRPREF='&&PREFIX..&&WKID'
The prefix that is used with the last qualifier of SYSRE*nnn* data sets.

SYSRPS=10 The primary space allocation in cylinders for SYSRE*nnn* data sets.

SYSRSS=2 The secondary space allocation in cylinders for SYSRE*nnn* data sets.

SYSRUNIT=SYSDA The default UNIT for creating SYSRE*nnn* data sets.

SYSTYPE=S Indicates if DB2 Subsystem character strings can contain a mixture of SBCS and DBCS data.

M mixed
S single-byte only

SZDEVT=3380 The device type for data set sizing for JCLGEN. Valid values are 3380 and 3390.

TAPE1=CART, TAPE2=TAPE, TAPE3=TAPE
Defines the valid installation tape unit names for your site.

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TIMEPARM Indicates the TIME limit in minutes for each step in a batch job stream.

WDC The Data Facility Storage Management Subsystem (DFSMS or SMS) data class name, used at data set allocation time, to define the allocation attributes of the data set. A data class name is not required, even for SMS data sets. WDC will appear as `"DATACLAS= "` in the JCL for workfiles.

WDSN='''&&PREFIX..&&SSID..&&WKID'''
The default worklist data set name for a new Work ID. This data set can be either a sequential file or a partitioned data set (PDS).

Note: In many installations, allocation of data sets is controlled by user-written or third-party routines. If allocation fails, you should use alternate means, such as ISPF, to perform the allocations.

WMC The SMS management class name, used at data set allocation time, to define the migration, retention, and backup requirements of the data set. WMC will appear as `"MGMTCLAS= "` in the JCL for workfiles.

WPS=10 Defines the default work primary space allocation in cylinders for work data sets that include Analysis and Execution diagnostics.

WSC The SMS storage class name, used at data set allocation time, to define processing requirements of the data set. WSC will appear as `"STORCLAS= "` in the JCL for non-tape work files.

WSS=2 Defines the default work secondary space allocation in cylinders for work data sets that include Analysis and Execution diagnostics.

WU=SYSDA Defines the default work unit. Work data sets include Analysis and Execution diagnostics data sets.

XPLAN=ASU*vrm*DX The name of the DASD MANAGER PLUS plan that is used for cross reference.

ZPLAN=ASU*vrm*DZ The name of the DASD MANAGER PLUS plan that is used for displaying DASD MANAGER PLUS statistics.

Post-Installation Considerations

After installation, refer to Chapter 4, “Performing Post-Installation Tasks,” for information about how to perform post-installation tasks for DASD MANAGER PLUS.

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Chapter 9 Installing the Client for ALTER and CHANGE MANAGER

This chapter presents the following topics:

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- Domestic and International Supported Environments 9-2

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- Setting up the Client 9-3
- Verifying Server Networking 9-4
- Selecting the Type of Installation 9-5
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Overview

This chapter provides information about installing, configuring, and starting the client for ALTER and CHANGE MANAGER. The client provides a graphical front-end to the MVS Server for the Database Administration products.

Prerequisites

Table 9-1 lists the requirements for the system software that the products support.

Table 9-1 System Software Requirements

Operating System Platforms	Minimum Hardware Requirements	Free Disk Space and Product Requirements
• Windows NT 4.0 with Service Pack 4 or later applied • Windows 98 Second Edition • Windows 2000	• 64 MB RAM • 200 Mhz Pentium • VGA video (at least 600 X 800) • 4X CD-ROM Drive or higher	• ALTER: 71.8 MB • CHANGE MANAGER: 72.0 MB • 6 MB in the **temp** directory for temporary files created during installation [If **temp** is not defined, 6 MB of free space in the **windows** (or **winnt**) directory is required.]

Domestic and International Supported Environments

The products include domestic and international versions, which are categorized as follows:

- U.S. English data (US7ASCII), which is single byte

  Sorting is based on ASCII code page values.

- European data support, which includes support for extended character sets in any single-byte, left-to-right language and support for local date and time formats

  Note: Code-page specification is required as part of the server installation. For more information, refer to “Confirming the Host-Code Page for the MVS Server” on page 4-43.

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- the ability to work with any supported local language in all parts of the product, including meta objects such as filter names, session names, and catalog data
- support for the creation and management of any persistent object in the user's native language

Installing the Client

Before you can install the client for any of the products, you must have installed and configured the MVS Server. For information about the MVS Server, refer to "Performing the Post-Installation Tasks for the MVS Server" on page 4-22.

Setting up the Client

You need the following items to install clients:

- the MVS Server configuration settings
- sufficient disk space on your client system
- at least 6 MB of free space in the **/temp** directory (which is defined in the **autoexec.bat** file)

  If the **TEMP** environment variable is not defined, ensure that the drive containing your **windows** directory has at least 6 MB of free space. This space is used for the creation of temporary files during the installation process.
- all applications closed down prior to installing the client

To ensure that the network is configured properly, see "Verifying Server Networking" on page 9-4.

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Verifying Server Networking

Summary: This procedure describes how to verify that your network is working properly.

Step 1 From a DOS prompt, enter **ipconfig /all** (Windows NT) or **winipcfg /all** (Windows 98 or Windows 2000).

Your host name and IP address appear, as shown in the following example:

```
Windows NT IP Configuration:
Host Name......:yourname.yourcompany.com
.
.
DHCP Enabled.....:No
IP Address.......:172.18.22.15
```

Step 2 From a DOS or command prompt, enter **ping *server***, where ***server*** is the location of the MVS Server.

If the **ping** returns the message `Bad IP address` *`server`* or `Request timed out`, you can continue with the installation. However, you must resolve this network problem before you can use the product.

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Selecting the Type of Installation

To meet the specific needs of your site, you can select from the types of client installations that are shown in Table 9-2.

Table 9-2 Client Installation Options

Installation Option	Description and Benefit	See Section
install to a local hard drive	installs the specified products to a local hard drive After the products are installed, you can remove the CD from the CD-ROM drive.	“Installing a Client to Run Locally” on page 9-6
copy the installation image to a network drive and then install the client to the local hard drive	copies an image of the installation from the CD to a resource from which other users can install the client to their local hard drive	“Installing the Client on a Network Drive” on page 9-8 “Installing a Client to Run Locally” on page 9-6
“silent” installation from a command prompt	installs the client from a command prompt with minimal user interaction	“Installing a Client (Command-Line Interface)” on page 9-9
install using distribution software	installs the client to every workstation to which you have access without the need to leave your computer	“Installing the Client Using Distribution Software” on page 9-11

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Installing a Client to Run Locally

Summary: This procedure enables you to install the client on your hard drive to run locally.

This procedure uses D for the CD-ROM drive. If your machine uses a different letter, substitute the correct drive letter.

Step 1 Insert the Database Administration product's CD into the client's CD-ROM drive.

The Database Administration product's Setup program launches automatically.

Step 2 Read the Welcome page, and click **Next** to continue.

Note: Use the **Next** and **Back** buttons to navigate through the Setup program. To go back and undo a selection, click **Back**. To continue, click **Nex**t.

Step 3 On the User Information dialog box, enter your name and company name, and then click **Next**.

Step 4 On the Choose Destination Location dialog box, review the installation destination location. If you prefer a different location, click **Browse** and select an appropriate location. To accept the default location, click **Next**.

Note: If you have a current version of the Database Administration products installed or if you have a version of the products that is earlier than the current version and you choose to install the products in the same directory, a warning is displayed. Choose another location in which to install the products. If you want to install the products in the same directory as the current version or as the earlier version, you must first exit the Setup program and uninstall the client.

Step 5 On the Select Components dialog box, select the products to install.

5.A Ensure that the Space Required does not exceed the Space Available. If it does exceed the space available, click **Disk Space** and select a new drive that contains the appropriate amount of space.

The new drive location appears in the Destination Location.

5.B Click **Next** to continue.

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Step 6 On the Select Program Folder dialog box, accept the program folder name, type in a new folder name, or select a folder name from the list. Then, click **Next**.

Step 7 When the Start Copying Files dialog box appears, verify that the displayed installation options are correct. Click **Next** to begin the installation, or click **Back** to change the installation options.

Step 8 When the installation is complete, click **Finish**.

Where to Go From Here

The next task is to start and configure the client. See “Starting and Configuring the Client” on page 9-18.

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Installing the Client on a Network Drive

Summary: This procedure describes how to provide full access to the files on the CD by copying the installation image from the CD to a shared network drive and then installing the product locally. This option provides anyone who wants to install the client on their local hard drive full access to the range of product offerings.

The following procedure uses ***n*** for the network drive. If your network drive is mapped to another letter, substitute the correct drive letter.

Step 1 Insert the Database Administration product's CD into the client's CD-ROM drive.

The Database Administration product's Setup program launches automatically.

Step 2 Click **Cancel** and then click the **Exit Setup** button.

Step 3 Copy the files from the CD to a shared network drive.

From Windows Explorer, choose the CD-ROM drive and select all of the files on the drive. Copy the highlighted files to a shared network drive.

Step 4 Start the Database Administration products' Setup program.

From Windows Explorer, double-click **setup.exe** from the location on the network where the Database Administration installation files reside. Alternatively, click the **Start** button and choose **Run**. Enter ***n*:*install_dir*\setup.exe** in the Run dialog box.

The Welcome page of the Setup program appears.

Step 5 Follow Step 2 through Step 8 in the task "Installing a Client to Run Locally" on page 9-6.

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Installing a Client (Command-Line Interface)

Summary: This procedure describes how to install the client by using the command-line interface. The setup command-line interface is provided as a consistent and faster means to install the client. To use the command-line interface, you must first edit the initialization file to make product selections and to specify directory locations for the files. After you complete this task, you can use this initialization file for every installation in your organization. This type of installation ensures that all users connected to a network install the same set of products by entering a single command.

Step 1 Copy the client images to your hard drive or to a shared network drive. The client images are located in the **client** directory.

Step 2 Modify the **PDB_Install.ini** file to make product and directory selections. When editing the file, specify 0 to disable a selection and specify 1 to enable a selection. The only requirement when editing this file is that you must select a product in the `[Selections]` section.

Figure 9-1 shows an example **PDB_Install.ini** file. In this example, the user selected the CHANGE MANAGER product and specified **c:\pdbclient\6.2.01** as the installation folder.

Figure 9-1 Modifying the PDB_Install.ini File (Client Installation)

```
[Selections]

CHANGE MANAGER for DB2 MVS=1
ALTER for DB2 MVS=0

[Information]
User Name=BMC Customer
Company Name=BMC Customer

[Start Menu]

Program Folder=PATROL DB-Admin Client OS390

[Directory]

;Default value is c:\Program Files\BMC Software\PATROL DB-Admin Client OS390
InstallFolder=c:\pdbclient\6.2.01
```

Step 3 From a command prompt, change the current drive and directory to the location at which you copied the client images.

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Step 4 Run the command-line “silent” setup command, **setup -s**.

This command accepts the following options:

setup -s -m *filename*

-s indicates “silent” and **-m** indicates the specification of a MIF filename. The **-m** parameter and filename are optional. The MIF file indicates the status of the installation (successful or unsuccessful). It does not have to currently exist.

Note: The order of these options is important. Specifying the **-m** option before the **-s** option will not invoke the MIF file.

Step 5 Check the status of the installation to determine if it was successful. To do so, locate the MIF file in the **\windows\temp** or **\winnt\temp** directory that you specified in Step 4.

Note: An unsuccessful installation may be due to a shortage of disk space. If you did not specify a MIF file, check the **pdba_out.trc** file in the **\windows** or **\winnt** directory for specific warning or error messages associated with the installation.

Where to Go From Here

After you install the client, you can start and configure it. See “Starting and Configuring the Client” on page 9-18.

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Installing the Client Using Distribution Software

Summary: By using distributed systems software such as the Microsoft SMS product (or any other product that supports packages), you can install the Database Administration product on every desktop in your organization to which you have access. When combined with the consistency of the command-line, silent installation, this means of product distribution provides a faster, more consistent approach to updating and distributing software.

Step 1 Copy the client images to your hard drive or to a shared network drive. The client images are located in the **client** directory.

Note: Be sure to copy the client images to a directory that is different from the directory where you copied the server images.

Step 2 Modify the **PDB_Install.ini** file to make product and directory selections. When editing the file, specify 0 to disable a selection and specify 1 to enable a selection. The only requirement when editing this file is that you must select a product in the `[Selections]` section.

See Figure 9-1 on page 9-9 for an example of a **PDB_Install.ini** file.

Step 3 Run the distributed system software package at your site, making the necessary selections as requested. For example, using the Microsoft SMS product to distribute the installation, you should

- create an SMS package by using the **setup.pdf** file (included in the directory where you copied the Database Administration product images)
- schedule an SMS job by using the package that was created using the **setup.pdf** file
- ensure that the client receives and runs the package

Where to Go from Here

After you install the client, you can start and configure it. See “Starting and Configuring the Client” on page 9-18.

Verifying Installed Files

The directories and files that are listed in Table 9-3 are installed on the client. (The default is on the C drive.) During installation, you can specify a particular directory to which to install the Database Administration product files. By default, this directory is **Program Files\BMC Software\PATROL DB-Admin Client OS390**.

Table 9-3 Client Installation Directories

Directories and Files	Description
common	common files and executables
DB2 OS390	client executables, DLLs, common executables, library files, and help files
DB2 OS390\bin\charmaps	character maps
DB2 OS390\bin\en_us.iso88591	help and message files
DB2 OS390\bin\icons	icons
DB2 OS390\bin\iconv	code page conversion tables
DB2 OS390\bin\locale	installed locales, function and format tables
DB2 OS390\config	client configuration directory
DB2 OS390\work	work directory

Troubleshooting the Client Installation

If your client installation stops abnormally, you should delete any temporary directories and files that the installation process created before it terminated. The installation process creates the following temporary directory and files:

~istmp*x*.**dir** (where *x* is a number)
~ins0433.~mp
~isz0433.~mp

If your **TEMP** environment variable is set, you can find these files in the **\temp** directory. Otherwise, look for them in the **\windows** or **\winnt** directory.

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Maintaining the Client

For most installations, you can proceed directly to “Starting and Configuring the Client” on page 9-18. At some point however, you may need to upgrade or change the client. The following sections discuss

- adding a product
- uninstalling a client
- reinstalling a product

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Adding a Product

Summary: This task describes how you can add a product.

Step 1 Run the Setup program as you normally would for the installation type that you want to perform.

Step 2 Select the new products that you want to install.

Step 3 Clear the selection for those products that are already installed.

Note: The disk space requirements listed in this chapter are for an initial installation. Disk space requirements for additional products are reduced by the amount of disk space that you used for the initial installation.

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Uninstalling a Client (GUI)

Summary: This procedure describes how to uninstall one or more of the Database Administration products. When you uninstall a product, all installed product files are deleted, but any saved work files remain.

Step 1 From Windows, click the **Start** button.

Step 2 Choose **Settings => Control Panel**.

Step 3 Double-click the **Add/Remove Programs** icon.

Step 4 Select the PATROL Database Administration Client OS390.

Step 5 Click the **Add/Remove** button.

Step 6 Click **OK**.

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Uninstalling a Client (Command-Line Interface)

Summary: This procedure describes how to uninstall a client by using the command-line interface.

From a command prompt, run the command-line “silent” setup command, **setup**, located in the client images folder that you copied to your hard drive.

This command accepts the following options:

isuninst -f"*pathname*\pdba_log.isu"

-f indicates the location of the **pdba_log.isu** log file and *pathname* indicates where the product was installed. The **pdba_log.isu** log file is created during the installation. The installation program uses the file to perform cleanup tasks.

Note: Do not include a space between the **-f** option and the double quotes (").

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Reinstalling a Product

Summary: This task describes how you can reinstall a product if you want to change the existing installation or if files in the product directories were deleted or corrupted.

Step 1 Use the same installation instructions that you used for the previous installation.

The program prompts you to confirm information that you provided during the previous installation.

Step 2 Verify the installed files.

Note: The disk space requirements in this chapter are for an initial installation. Disk space requirements for a reinstallation are reduced by the amount of disk space that you used for the initial installation.

Where to Go From Here

After you reinstall the product, you can start and configure the client. See “Starting and Configuring the Client” on page 9-18.

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Starting and Configuring the Client

This section provides information about starting, stopping, and configuring the client. See the online Help for complete instructions about defining hosts and creating subsystem connections.

Starting the Client

To start the client, double-click the product icon from the PATROL DB-Admin Client OS390 program group. The PATROL Database Administration window appears.

To stop the client, make the PATROL Database Administration window active. Then, choose **Exit** from the File menu.

Configuring the Client

After you install the server and the client, you must configure the client before you can use the product. Start the client and then perform the following configuration tasks:

- define hosts or servers

  A host or server is the OS/390 system that performs the MVS Server operations. Each host or server has both an MVS Server and at least one DB2 subsystem installed on it. Identifying an available host or server to the client is called *defining a host or server.*

  You must define at least one host or server to use the Database Administration products. You should define a separate host or server for each system that you want to use as a server for the Database Administration products.

- create subsystem connections

  When you start a connection, you use a subsystem connection to specify the details for that connection. For DB2 for OS/390 connections, the subsystem connection specifies which Database Administration product, host, DB2 subsystem, and TSO user ID to use during that connection.

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If you plan to connect to different combinations of Database Administration products, hosts, and databases, you should create a separate connection profile for each possible combination. The name of the subsystem connection must be unique even though multiple connections may use the same host.

Note: Client configuration is not necessarily a one-time activity. At some point in the future, you may need to modify your hosts or subsystem connections. Use the Connection Manager any time that you need to add or change a host or subsystem connection.

See the Help for complete instructions on defining hosts and creating subsystem connections.

Where to Go From Here

After configuring the client, you are ready to connect to a database and begin using the product. To use the product, see the *ALTER and CHANGE MANAGER for DB2 User Guide* or each product's online Help for more information.

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Appendix A BMC Software Product Authorization

This appendix presents the following topics:

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Product Authorization Tables A-3
Problem Regarding Product-Authorization Table Installation A-3
Product Authorization Passwords A-4
Permanent Passwords A-4
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Overview

When the Contracts Administration department of BMC Software processes a license agreement for a product, it issues *CPU authorization passwords*. These passwords authorize specific CPUs (also referred to as processors) to run the licensed product. Because BMC Software licenses its products for use on individual CPUs, the passwords are product-specific and CPU-specific (one license per product per CPU). To delete or replace an authorized CPU, you must also have a password.

The types of passwords are as follows:

- Temporary passwords are issued for product trials or in other special circumstances (for example, when a hardware failure prevents you from using the authorized CPU).

- Permanent passwords are issued when you convert to a permanent license, delete or replace a CPU, or modify the properties of a CPU or the product-authorization tables.

You use the BMC Software Product Authorization utility to apply passwords and to change your CPU configuration.

Note: You do not need to apply passwords or update CPU authorization when you install product maintenance or version upgrades.

Passwords can be processed in either of the following ways:

- as part of an online procedure
- in a batch interface that uses a job that is supplied on the product distribution tape

This appendix describes the process that you use to apply passwords and to reconfigure your CPU, either permanently or temporarily. If you have additional authorization questions or concerns about the Product Authorization utility, contact your BMC Software sales representative.

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Product Authorization Tables

When you apply passwords, the BMC Software Product Authorization utility builds or updates product-authorization tables. The utility uses passwords to create entries in the tables that define the authorization for the product and to validate software licenses.

The types of product-authorization tables are as follows:

- The Product Authorization utility builds or updates a permanent product-authorization table when you install or apply a permanent password. The permanent table controls which CPUs are licensed to run the product, based on the serial number, the model number, and the submodel number of the unit.

- The Product Authorization utility builds or updates a temporary product-authorization table when you apply a temporary password.

See “Product Authorization Passwords” on page A-4 for more information about permanent and temporary passwords.

Product-authorization tables are product-specific and are identified by the three-character product code, as in the following examples (where the variable *prd* is the three-character product code):

*prd*TBL3P (permanent)

*prd*TBL3T (temporary)

Problem Regarding Product-Authorization Table Installation

Do not install the Product Authorization tables into load modules that are PDS/Es (Partition Dataset - Extended). PDS/E files cannot contain load modules and data type objects together in the same file. The Product Authorization table is a data file, normally stored in the product loadlib.

Installing Product Authorization tables into load module PDS/Es will cause a failure when attempting to apply the password to the product library.

Detailed Error Message

```
13.10.20 JOB05439  IEC036I
         002-CC,IGC0005E,RDACAL2S,SECSEC3B,SYSLIB,582B,DEVS97,
13.10.21 JOB05439    IEA995I SYMPTOM DUMP OUTPUT
         SYSTEM COMPLETION CODE=002  REASON CODE=000000CC
```

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Solution

This problem will be corrected in a future version of the Product Authorization utility; however, the problem can be circumvented by specifying a different library to contain the product authorization tables. You should allocate a separate PDS or PDS/E for the authorization table and specify this PDS or PDS/E when installing the password. If you have questions about the problem or the work-around, contact your BMC Software Product Authorization technical support analyst at 800 537 1813 (USA or Canada) or call your local support center.

Product Authorization Passwords

Valid passwords can include the following characters:

- the alphanumeric character set, excluding the letters *I* and *O* to avoid confusion with the numbers one (1) and zero (0)
- equal sign (=), “at” sign (@), and plus sign (+)

Note: If your keyboard does not have the “at” sign (@), you can use the asterisk (*) in place of @. You can use these two characters (@ and *) interchangeably when typing passwords.

Permanent Passwords

Permanent passwords update a product’s permanent authorization table. Each permanent password has one of the functions described in Table A-1. When you apply a permanent password, the Product Authorization utility automatically recognizes that password’s function and prompts you accordingly.

Table A-1 Permanent Password Functions

Function	Description
Add	authorizes one new CPU to run the product
Delete	removes one CPU from the table, preventing that CPU from running the product
Replace	replaces one CPU in the table with another CPU, allowing the new CPU to run the product in place of the old CPU
Modify	modifies one or more properties of one CPU that currently exists in the product-authorization table
Reset	modifies the global properties of the product-authorization tables

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Temporary Passwords

BMC Software issues temporary passwords to customers who are evaluating products on a trial basis or to customers who need to bypass product authorization to run a product temporarily on an unlicensed CPU. Temporary passwords have a specific expiration date, which is part of the password.

How to Apply Passwords

A password is an activation key for the software license, not the software license itself. Apply your new passwords as soon as possible after you receive them because temporary passwords have a limited lifespan, which is typically 30 days.

You can apply the new passwords before you completely install the product if you have installed the Product Authorization utility and have downloaded the product load library. Also, you can apply the passwords even if the product is not yet running on a specific CPU. For example, if your installation process requires that you install and run the product on a test system before migrating it to the production system, you can apply the password for the production system's CPU, even though the product is not yet running there.

How Products Are Licensed

You must use the Product Authorization utility in the following situations:

- for product trials and permanent licensing
- when upgrading to a new CPU
- when an authorized CPU fails

Note: Although you do not need the Product Authorization utility for product maintenance and version upgrades, you must consider certain issues that are associated with these upgrades. See “Product Maintenance or Version Upgrades” on page A-8 for more information.

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Product Trials and Permanent Licensing

During a trial period for a BMC Software product, you can install and use the product on any CPU by using a temporary password that you obtained from your BMC Software sales representative. When you finish the trial and want to obtain a product license, the following rules apply:

- You must purchase a product license for each CPU on which you will run the product.
- BMC Software Contracts Administration issues a permanent password for each combination of CPU and licensed product.
- To enable a product on a CPU, you must add the permanent password that is issued for that CPU. You do *not* need to reinstall and retest the product.
- You can install multiple passwords in the same product library. This capability lets you use the same load library to run a product on multiple CPUs or to install a product at a central site and run it at remote sites.

CPU Upgrades

When you upgrade to a new CPU, *you must obtain a new permanent password for each product that you want to use on that CPU*. When you install the new password, the old entry in the authorization table for the product is replaced. The new table entry defines the authorization for the product.

CPU Failures

If a hardware failure or a disaster-recovery situation prevents the use of a licensed CPU, BMC Software can provide a temporary license that lets the product run on a backup CPU for a limited time. Before the temporary license expires, you must acquire a permanent license for the new CPU or you must resume using the original CPU. At the end of the grace period, you can no longer run the affected product on the temporary CPU. If this situation occurs, you must obtain a new password to reset the grace period.

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Updating Product-Authorization Tables

To trigger the grace period, the license validation process must update the authorization tables. If the product load library must be WRITE-protected, problems could occur with updates. To avoid problems, you can place the authorization tables in another data set and concatenate that data set to the product load library.

The concatenated authorization-table library should have the same DCB attributes as the product's load library. (The RECFM for the table library must be *U*.) If you have several BMC Software products, you may want to dedicate one library that includes all authorization tables for all products.

Before updating the library that contains the authorization tables, the license validation process determines whether the data set is in LNKLST. If the data set is in LNKLST, the license validation process does not attempt an update.

Running a Product on an Unlicensed Processor

When you run a product on an unlicensed processor, a 15-calendar-day grace period can be triggered. After this grace period expires, the product will not run or will run with diminished functionality.

Note: The product will continue to function normally when run on a licensed CPU, even if the grace period has been triggered or has expired.

To prevent this situation, you should obtain a RESET password from BMC Software Contracts Administration. If you apply the RESET password before the grace period ends, it updates the product-authorization table and makes another 15-calendar-day grace period available.

When the grace period is triggered, the Product Authorization utility (either online or in batch mode) and the affected product issue a message that advises you of the expiration date.

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Product Maintenance or Version Upgrades

Installing a new maintenance level or upgrading the version or release level of a product has no effect on product authorization. No new passwords are required. However, you must ensure that your authorization tables reside in the new production libraries. If you install products in a test environment before moving them to production, the product-authorization tables must also reside in the test libraries. If you try to run the product on a different CPU, that CPU must also be licensed. Copy the product-authorization tables from the *old* library to the *new* library that contains the product's new maintenance or upgrade. To copy the tables from the old library to the new library, use the job *prd*CPUID, where the variable *prd* is the three-character product code.

Although the product-authorization tables typically reside in the product's load library, these tables are not load modules. If you are running ISPF 4.2 or later, you may not be able to copy these tables by using the ISPF Move/Copy utility (option 3.3). You could receive a STOW error, or one or more of the following error messages:

```
IEW2515W 4731 DIRECTORY ENTRY FOR prdTBL3n IDENTIFIED BY
DDNAME ISPddname IS NOT MARKED AS LOAD MODULE.

IEW2522E 470E MEMBER prdTBL3n IDENTIFIED BY DDNAME
ISPddname... IS NOT A LOAD MODULE- (INVALID RECORD TYPE).

IEW2307S 1032 CURRENT INPUT MODULE NOT INCLUDED BECAUSE
OF INVALID DATA.

COPY FAILED FOR MEMBER prdTBL3n.  FAILURE IN IEWBIND
INCLUDE, RETURN CODE 8 REASON CODE 83000507
```

In these messages, the variable *prd* is the three-character product code and *n* is either `P` (permanent) or `T` (temporary). See "Product Authorization Tables" on page A-3 for more information.

If you receive any of these messages, use the IEBCOPY utility to copy the tables. Do not use the IEBCOPY COPYMOD parameter when copying the product-authorization tables.

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How to Obtain Passwords

Table A-2 describes the situations in which you need to obtain passwords. For each scenario, the table indicates the type of password that you need (temporary or permanent), what the password does, and how to obtain it.

Table A-2 Password Scenarios

Scenario	Password Type	Password Function	How to Obtain
You want to begin a free trial period.	temporary	temporarily bypasses authorization checking and allows you to run the product on any CPU for a limited time	BMC Software sales representative
You purchase a license for a new product.	permanent	adds a designated CPU to the list of CPUs that are authorized to run a licensed product	BMC Software Contracts Administration (which issues a password after processing the license agreement)
You stop using an authorized CPU.	permanent	removes a designated CPU from the list of CPUs that are authorized to run a licensed product	BMC Software sales representative or Contracts Administration
You upgrade to a new CPU.	permanent	authorizes the transfer of a license from one CPU to another	BMC Software sales representative or Contracts Administration
You want to run the product on an additional CPU.	permanent	adds a designated CPU to the list of CPUs that are authorized to run a licensed product	BMC Software Contracts Administration (which issues a password after processing the license agreement)
The authorized CPU is not available because of an emergency (such as hardware failure).	temporary	temporarily bypasses authorization checking and allows you to run the product on any CPU for a limited time	BMC Software sales representative, Contracts Administration, or Product Support
The grace period has been triggered and needs to be reset.	permanent	resets the grace period	BMC Software sales representative or Contracts Administration

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CPU Information

When you request a permanent product license from BMC Software, you must furnish information about the affected CPUs. For each product that you license, use the work sheet in Table A-3 to record the CPU information and the passwords that you receive from BMC Software. The first line of the table provides a sample entry for a 9X2 with three processors and a CPU ID of 10309-9021-DA.

Note: CPU information is not needed for temporary passwords.

Table A-3 Product Authorization Work Sheet

CPU Serial	CPU Type	Version Code	CPU Model	No. of CPUs	Permanent Password
10309	9021	DA	9X2	3	123,456,789,ABC
_ _ _ _ _	_ _ _ _	_ _	_ _ _	_ _	_ _ _ , _ _ _ , _ _ _ , _ _ _
_ _ _ _ _	_ _ _ _	_ _	_ _ _	_ _	_ _ _ , _ _ _ , _ _ _ , _ _ _
_ _ _ _ _	_ _ _ _	_ _	_ _ _	_ _	_ _ _ , _ _ _ , _ _ _ , _ _ _
_ _ _ _ _	_ _ _ _	_ _	_ _ _	_ _	_ _ _ , _ _ _ , _ _ _ , _ _ _
_ _ _ _ _	_ _ _ _	_ _	_ _ _	_ _	_ _ _ , _ _ _ , _ _ _ , _ _ _

For information about determining your CPU ID, see “Displaying Current Processor Information” on page A-26 or use the LIST option of Batch Product Authorization (see page A-29).

Online Product Authorization

This section describes the online interface that is used for product authorization. To apply passwords using the batch interface, see “Batch Product Authorization” on page A-27.

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Processing a Permanent Password

Use the Product Authorization Primary Menu (Figure A-1) to process passwords. You can also obtain pertinent information about the current processor and the authorization for that processor.

Figure A-1 Product Authorization Primary Menu (SECEPPRI)

```
SECEPPRI         <product-name> Product Authorization Primary Menu
COMMAND  ===> ____________________________________________________________

Select an option. Type additional information if applicable. Then press Enter.

Options

_  1.  Process password (Requires product load library and password)
   2.  Display product authorization (Requires product load library only)
   3.  Display current processor information
   4.  Help about...
   5.  Exit


Additional information

   Product load library . . . 'BMC.PRODUCT.INSTALL'

   Authorization password . . ___  ___  ___  ___



 F1=Help    F2=Split   F3=Exit    F7=Bkwd    F8=Fwd     F9=Swap   F12=Cancel
```

Table A-4 describes each option on the primary menu. The following sections of this appendix provide instructions for completing specific tasks, such as adding authorization to run the product on a new CPU.

Table A-4 Product Authorization Primary Menu Options

Option	Description
1	processes a password that BMC Software Contracts Administration provides to you Use this option to add, delete, replace, modify, or reset authorization for a password. The Product Authorization utility automatically identifies the type of password and displays the appropriate panel.
2	displays a listing of processors that are currently authorized to use the product The listing also displays when the authorization was last modified (and by whom) and the trial or temporary expiration date.
3	displays information about the current processor, including the serial number, the model number, the version code (submodel), and the number of available processors
4	displays version, copyright, and licensing information about the Product Authorization utility
5	exits the Product Authorization utility and returns to the previous menu or panel

Note: If you select option 1, you must also type the name of the product's load library and the authorization password. The utility saves the library name in your ISPF profile and uses that name as the default library. The data set name must be fully qualified.

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Adding Authorization for a Processor

Summary: Use the ADD Authorization for a Processor panel to authorize a new CPU to run the product.

Step 1 Access the ADD Authorization for a Processor panel as follows:

1.A On the Product Authorization Primary Menu (Figure A-1 on page A-11), select option 1.

1.B At **Product load library**, type a fully-qualified data set name and press **Tab**.

1.C At **Authorization password**, type your permanent password and press **Enter**.

The ADD Authorization for a Processor panel is displayed. Figure A-2 shows a sample.

Figure A-2 ADD Authorization for a Processor Panel (SECEPADD)

```
SECEPADD              ADD Authorization for a Processor
Command ===> ____________________________________________________________


Supply information for all input fields. Then press Enter.


     Authorization password  . . : X04  UH9  KNG  JKE


     New serial number . . . 10293
     New model number  . . . 9672   (for example, 9021, 9121, 3090)









 F1=Help    F2=Split   F3=Exit    F7=Bkwd    F8=Fwd     F9=Swap   F12=Cancel
```

Step 2 At **New serial number**, type the serial number of the processor for which you are adding authorization.

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Step 3 At **New model number**, type the model number of the processor for which you are adding authorization and press **Enter**.

A pop-up message on the Product Authorization Primary Menu explains that the product-authorization table was modified successfully (Figure A-3).

Figure A-3 Product Authorization ADD Message

```
SECEPPRI       <product-name> Product Authorization Primary Menu
COMMAND  ===> ____________________________________________________________

Select an option. Type additional information if applicable. Then press Enter.

Options

_  1.  Process password (Requires product load library and password)
   2.  Display product authorization (Requires product load library only)
   3.  Display current processor information
   4.  Help about...
   5.  Exit

Additional information

   Product load library . . . BMC.PRODUCT.LOAD
                             .-------------------------------------------------.
   Authorization password . | BMC89127I PROCESSOR WAS SUCCESSFULLY ADDED TO   |
                            | THE PRODUCT AUTHORIZATION TABLE. YOU ARE NOW    |
                            | AUTHORIZED TO EXECUTE THIS PRODUCT ON SERIAL    |
                            | NUMBER 10293, MODEL NUMBER 9672. PRESS ENTER TO |
                            | CONTINUE.                                       |
                            '-------------------------------------------------'
F1=Help    F2=Split   F3=Exit    F7=Bkwd    F8=Fwd     F9=Swap   F12=Cancel
```

Step 4 Press **F3** to exit the Product Authorization utility and return to the previous menu or panel.

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Deleting Authorization for a Processor

Summary: Use the DELETE Authorization for a Processor panel to remove a CPU from the product-authorization table.

Step 1 Access the DELETE Authorization for a Processor panel as follows:

1.A On the Product Authorization Primary Menu (Figure A-1 on page A-11), select option 1.

1.B At **Product load library**, type a fully-qualified data set name and press **Tab**.

1.C At **Authorization password**, type your permanent password and press **Enter**.

The DELETE Authorization for a Processor panel is displayed. Figure A-4 shows a sample.

Figure A-4 DELETE Authorization for a Processor Panel (SECEPDEL)

```
SECEPDEL              DELETE Authorization for a Processor
Command ===> ____________________________________________________________


Supply information for all input fields. Then press Enter.


     Authorization password  . . : BFP  A=M  QG3  =7V


     Old serial number . . . 10293
     Old model number  . . . 9672   (for example, 9021, 9121, 3090)









 F1=Help    F2=Split   F3=Exit    F7=Bkwd    F8=Fwd     F9=Swap   F12=Cancel
```

Step 2 At **Old serial number**, type the serial number of the processor for which you are deleting authorization.

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Step 3 At **Old model number**, type the model number of the processor for which you are deleting authorization and press **Enter**.

A pop-up message on the Product Authorization Primary Menu explains that the product-authorization table was updated successfully (Figure A-5).

Figure A-5 Product Authorization DELETE Message

```
SECEPPRI          <product-name> Product Authorization Primary Menu
COMMAND  ===> ____________________________________________________________

Select an option. Type additional information if applicable. Then press Enter.

Options

_  1.  Process password (Requires product load library and password)
   2.  Display product authorization (Requires product load library only)
   3.  Display current processor information
   4.  Help about...
   5.  Exit


Additional information

   Product load library . . . 'BMC.PRODUCT.LOAD'
                             .-------------------------------------------------.
   Authorization password . | BMC89128I PROCESSOR (SERIAL NUMBER 10293, MODEL |
                            | NUMBER 9672) WAS SUCCESSFULLY DELETED FROM THE  |
                            | PRODUCT AUTHORIZATION TABLE. PRESS ENTER TO     |
                            | CONTINUE.                                       |
                            '-------------------------------------------------'
 F1=Help    F2=Split   F3=Exit    F7=Bkwd    F8=Fwd     F9=Swap   F12=Cancel
```

Step 4 Press **F3** to exit the Product Authorization utility and return to the previous menu or panel.

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Replacing Authorization for a Processor

Summary: Use the REPLACE Authorization for a Processor panel to replace one CPU in the product-authorization table with another CPU. This process allows the *new* CPU to run the product in place of the *old* CPU.

Step 1 Access the REPLACE Authorization for a Processor panel as follows:

1.A On the Product Authorization Primary Menu (Figure A-1 on page A-11), select option 1.

1.B At **Product load library**, type a fully-qualified data set name and press **Tab**.

1.C At **Authorization password**, type your permanent password and press **Enter**.

The REPLACE Authorization for a Processor panel is displayed. Figure A-6 shows a sample.

Figure A-6 REPLACE Authorization for a Processor Panel (SECEPREP)

```
SECEPREP             REPLACE Authorization for a Processor
Command ===> ____________________________________________________________


Supply information for all input fields. Then press Enter.


     Authorization password  . . : 4XY  YAL  AMB  48S


     Old serial number . . . 10293
     Old model number  . . . 9672   (for example, 9021, 9121, 3090)

     New serial number . . . 10293
     New model number  . . . 9652   (for example, 9021, 9121, 3090)









 F1=Help    F2=Split   F3=Exit    F7=Bkwd    F8=Fwd     F9=Swap   F12=Cancel
```

Step 2 At **Old serial number**, type the serial number of the processor to be replaced.

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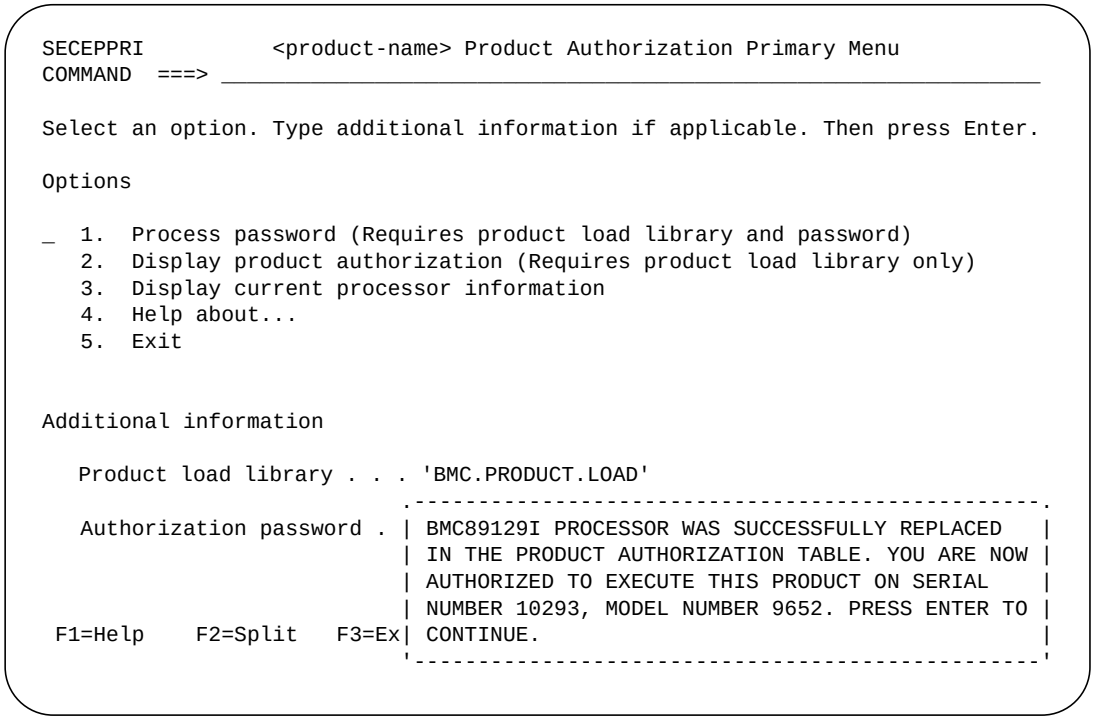
Step 3 At **Old model number**, type the model number of the processor to be replaced.

Step 4 At **New serial number**, type the serial number of the processor that will replace the old processor.

Step 5 At **New model number**, type the model number of the processor that will replace the old processor and press **Enter**.

A pop-up message on the Product Authorization Primary Menu explains that the product-authorization table was updated successfully, replacing the old processor with the new processor (Figure A-7).

Figure A-7 Product Authorization REPLACE Message


SECEPPRI <product-name> Product Authorization Primary Menu
COMMAND ===>
Select an option. Type additional information if applicable. Then press Enter.
Options
1. Process password (Requires product load library and password)
2. Display product authorization (Requires product load library only)
3. Display current processor information
4. Help about...
5. Exit
Additional information
Product load library . . . 'BMC.PRODUCT.LOAD'
Authorization password .
BMC89129I PROCESSOR WAS SUCCESSFULLY REPLACED IN THE PRODUCT AUTHORIZATION TABLE. YOU ARE NOW AUTHORIZED TO EXECUTE THIS PRODUCT ON SERIAL NUMBER 10293, MODEL NUMBER 9652. PRESS ENTER TO CONTINUE.
F1=Help F2=Split F3=Ex

Step 6 Press **F3** to exit the Product Authorization utility and return to the previous menu or panel.

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Modifying Authorization for an Existing Processor

Summary: Use the MODIFY Authorization for an Existing Processor panel to change one or more properties of an existing CPU in the product-authorization table. These properties include the version code, the number of significant digits for the serial number, the tier, the maximum number of processors, and the expiration date for the product license.

Step 1 Access the MODIFY Authorization for an Existing Processor panel as follows:

1.A On the Product Authorization Primary Menu (Figure A-1 on page A-11), select option 1.

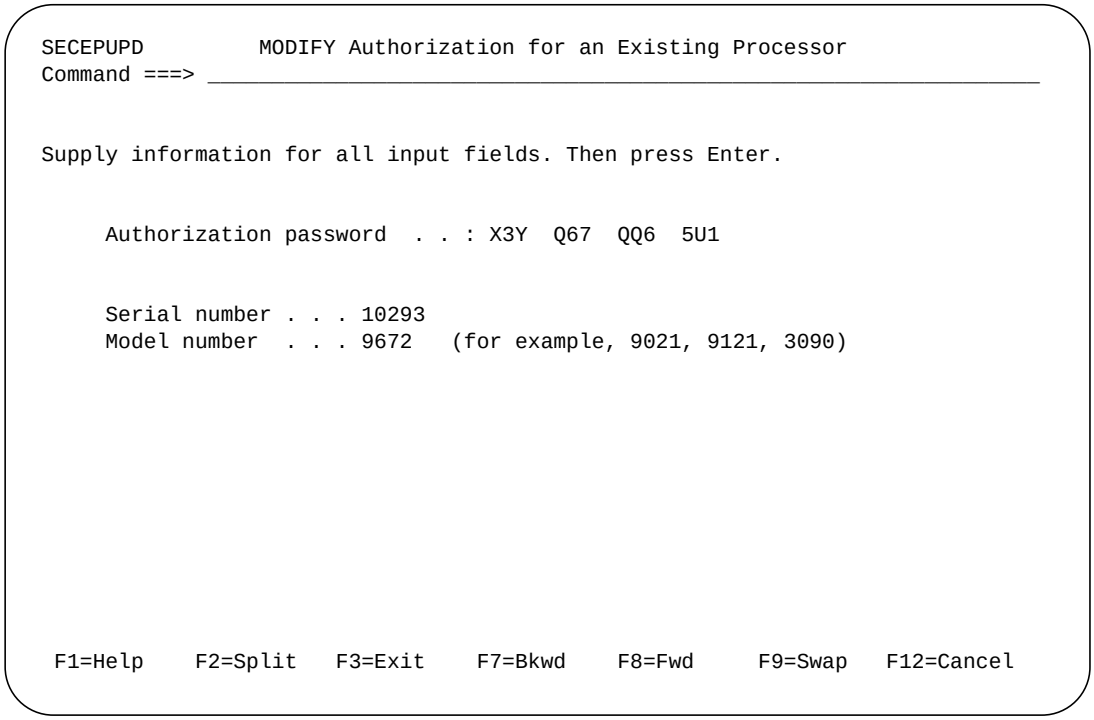
1.B At **Product load library**, type a fully-qualified data set name and press **Tab**.

1.C At **Authorization password**, type your permanent password and press **Enter**.

The MODIFY Authorization for an Existing Processor panel is displayed. Figure A-8 on page A-20 shows a sample.

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Figure A-8 MODIFY Authorization for an Existing Processor Panel (SECEPUPD)


SECEPUPD MODIFY Authorization for an Existing Processor
Command ===>
Supply information for all input fields. Then press Enter.
Authorization password . . : X3Y Q67 QQ6 5U1
Serial number . . . 10293
Model number . . . 9672 (for example, 9021, 9121, 3090)
F1=Help F2=Split F3=Exit F7=Bkwd F8=Fwd F9=Swap F12=Cancel

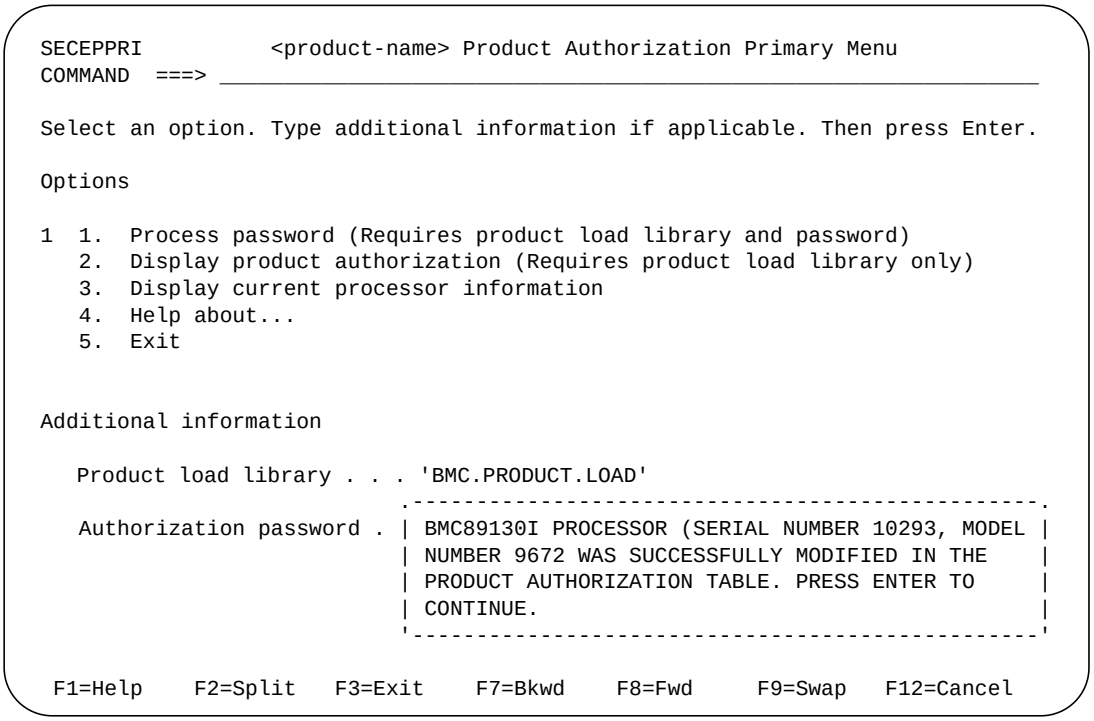
Step 2 At **Serial number**, type the serial number of the processor for which you want to modify the authorization.

Step 3 At **Model number**, type the model number of the processor for which you want to modify the authorization and press **Enter**.

The properties are modified automatically. A pop-up message on the Product Authorization Primary Menu explains that the product-authorization table was updated successfully (Figure A-9 on page A-21).

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Figure A-9 Product Authorization MODIFY Message


SECEPPRI <product-name> Product Authorization Primary Menu
COMMAND ===>
Select an option. Type additional information if applicable. Then press Enter.
Options
1 1. Process password (Requires product load library and password)
2. Display product authorization (Requires product load library only)
3. Display current processor information
4. Help about...
5. Exit
Additional information
Product load library . . . 'BMC.PRODUCT.LOAD'
Authorization password .
BMC89130I PROCESSOR (SERIAL NUMBER 10293, MODEL NUMBER 9672 WAS SUCCESSFULLY MODIFIED IN THE PRODUCT AUTHORIZATION TABLE. PRESS ENTER TO CONTINUE.
F1=Help F2=Split F3=Exit F7=Bkwd F8=Fwd F9=Swap F12=Cancel

Step 4 Press **F3** to exit the Product Authorization utility and return to the previous menu or panel.

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Resetting Authorization for all Processors

Summary: Use the Product Authorization Primary Menu to reset a global property (applying to all CPU IDs) of the authorization table.

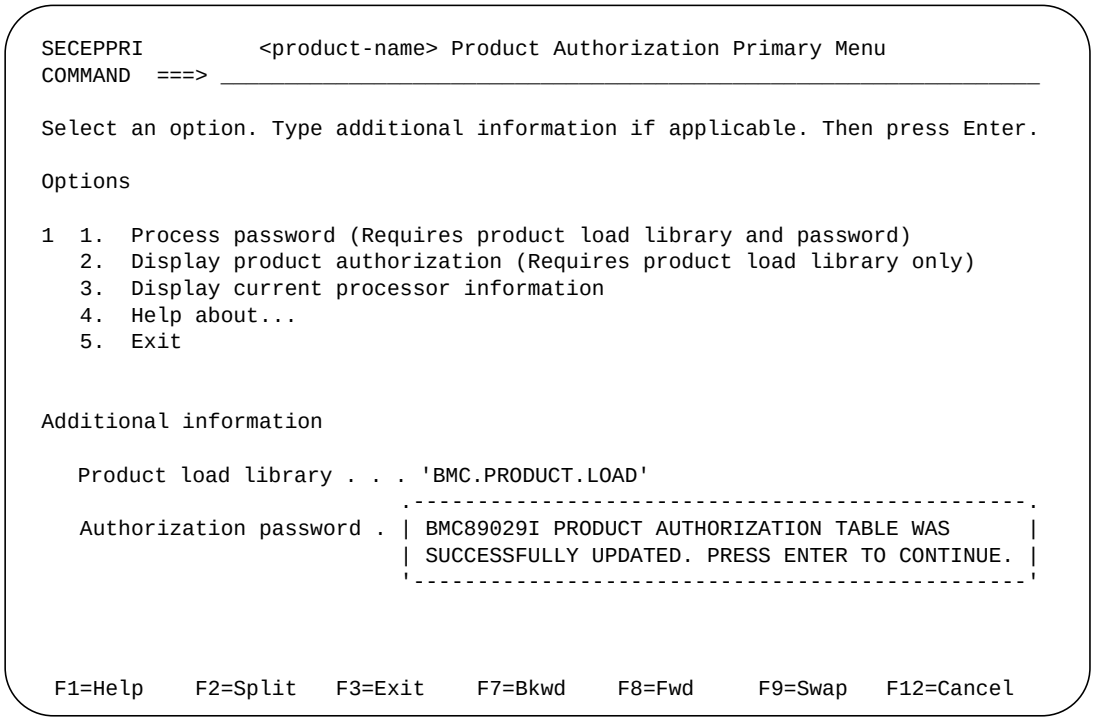
Step 1 On the Product Authorization Primary Menu (Figure A-1 on page A-11), select option 1.

Step 2 At **Product load library**, type a fully-qualified data set name and press **Tab**.

Step 3 At **Authorization password**, type your permanent password and press **Enter**.

A pop-up message explains that the product-authorization table was updated successfully (Figure A-10).

Figure A-10 Product Authorization RESET Message


SECEPPRI <product-name> Product Authorization Primary Menu
COMMAND ===>
Select an option. Type additional information if applicable. Then press Enter.
Options
1 1. Process password (Requires product load library and password)
2. Display product authorization (Requires product load library only)
3. Display current processor information
4. Help about...
5. Exit
Additional information
Product load library . . . 'BMC.PRODUCT.LOAD'
Authorization password .
BMC89029I PRODUCT AUTHORIZATION TABLE WAS
SUCCESSFULLY UPDATED. PRESS ENTER TO CONTINUE.
F1=Help F2=Split F3=Exit F7=Bkwd F8=Fwd F9=Swap F12=Cancel

Step 4 Press **F3** to exit the Product Authorization utility and return to the previous menu or panel.

Processing a Temporary Password

Summary: Use the Product Authorization Primary Menu to process a temporary password.

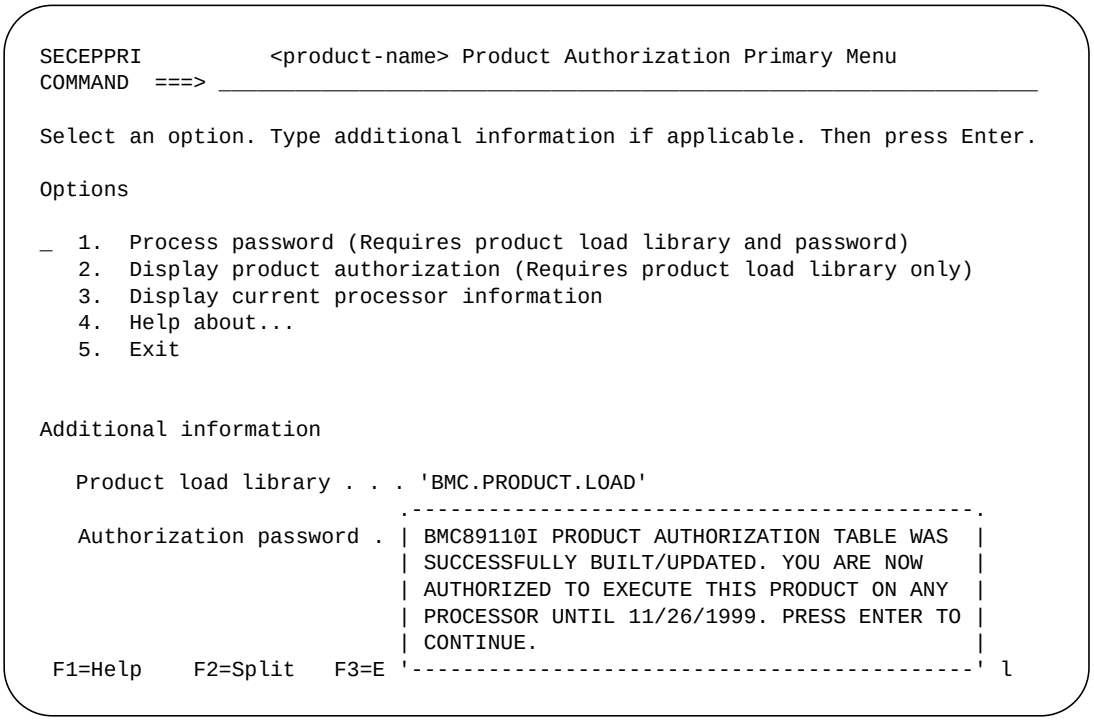
Step 1 On the Product Authorization Primary Menu (Figure A-1 on page A-11), select option 1.

Step 2 At **Product load library**, type a fully-qualified data set name and press **Tab**.

Step 3 At **Authorization password**, type your temporary password and press **Enter**.

A pop-up message explains that the product-authorization table was built or updated successfully (Figure A-11).

Figure A-11 Product Authorization Temporary Password Message


SECEPPRI <product-name> Product Authorization Primary Menu
COMMAND ===>
Select an option. Type additional information if applicable. Then press Enter.
Options
1. Process password (Requires product load library and password)
2. Display product authorization (Requires product load library only)
3. Display current processor information
4. Help about...
5. Exit
Additional information
Product load library . . . 'BMC.PRODUCT.LOAD'
Authorization password .
BMC89110I PRODUCT AUTHORIZATION TABLE WAS SUCCESSFULLY BUILT/UPDATED. YOU ARE NOW AUTHORIZED TO EXECUTE THIS PRODUCT ON ANY PROCESSOR UNTIL 11/26/1999. PRESS ENTER TO CONTINUE.
F1=Help F2=Split F3=E

Step 4 Press **F3** to exit the Product Authorization utility and return to the previous menu or panel.

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Displaying Product Authorization

Summary: Use the Product Authorization Display panel to display the current authorization for a product.

Step 1 On the Product Authorization Primary Menu (Figure A-1 on page A-11), select option 2.

Step 2 At **Product load library**, type a fully-qualified data set name.

Step 3 Press **Enter** to display the Product Authorization Display panel (Figure A-12).

See “Additional Information” on page A-25 for descriptions of the fields on this panel.

Step 4 When you finish reviewing the panel, press **F3** to exit the Product Authorization utility and return to the previous menu or panel.

Figure A-12 Product Authorization Display Panel (SECEPTBL)

```
SECEPTBL                 Product Authorization Display          ROW 1 TO 1 OF 1
Command ===> ____________________________________________________________________

Press Enter to continue.

   Load library . . . . . . . . . . . . . . : 'BMC.PRODUCT.LOAD'
   Product code . . . . . . . . . . . . . . : DOM
   Last changed  (mm/dd/yy-hh:mm) . . . . . : 11/19/96-10:11
   Last changed by  . . . . . . . . . . . . : RDHDXJ3
   Grace period ends (mm/dd/yyyy) . . . . . : 04/29/1999
   Temporary expiration date (mm/dd/yyyy) . : 05/10/1999

Licensed Processors                                          Product
                                          Maximum            License
  Serial  Model   Version  Significant    Number of          Expiration
  Number  Number   Code      Digits  Tier Processors         Date
   77403   3090     62          4    018  ALL                NONE
   10309   9021     D5          4    018  ALL                12/1999
****************************** Bottom of data ********************************



 F1=Help    F2=Split   F3=Exit    F7=Bkwd    F8=Fwd     F9=Swap   F12=Cancel
```

Additional Information

Table A-5 describes the information that the Product Authorization Display panel provides.

Table A-5 Field Descriptions for the Product Authorization Display Panel

Field	Description
Load library	name of the product's load library
Product code	code that BMC Software assigns to the product
Last changed (*mm/dd/yy-hh:mm*)	date and time that the product-authorization tables were last modified The variables are as follows: • *mm* represents the month (in the range 01 – 12) • *dd* represents the day (in the range 01 – 31) • *yy* represents the year (in the range 00 – 99) • *hh* represents the hour (in the range 00 – 23) • *mm* represents minutes (in the range 00 – 59)
Last changed by	user ID or job that requested the modification
Grace period ends (*mm/dd/yyyy*)	date when the grace period (if triggered) will end The variables are as follows: • *mm* represents the month (in the range 01 – 12) • *dd* represents the day (in the range 01 – 31) • *yyyy* represents the year (in the range 0001 – 9999) **Note**: This line appears only if the failure mode is phased and the grace period has been triggered. The grace period can be triggered when you run a permanently licensed product on an unlicensed processor. You should apply a RESET password to reset the grace period. Contact your BMC Software sales representative for assistance.
Temporary expiration date (*mm/dd/yyyy*)	date on which you will no longer be allowed to bypass the CPU ID check or trial the product The variables are as follows: • *mm* represents the month (in the range 01-12) • *dd* represents the day (in the range 01-31) • *yyyy* represents the year (in the range 0001-9999) **Note:** If this expiration date has not yet been reached, you can run this product on any processor. On the date shown, either your trial period will end or (if you have licensed the product) you will be able to run the product only on an authorized processors.
Licensed processors	list of properties for each licensed CPU The Version Code column reflects the hardware representation of the submodel. Significant Digits refers to the number of significant digits for the serial number. The expiration date indicates the month and year through which you are licensed for the specific processor. In most cases, this value is NONE. Most of the remaining processor information is provided for reference in case you need to contact BMC Software Product Support.

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Displaying Current Processor Information

Summary: Use the Current Processor Information panel to display information about the processor that you are currently using.

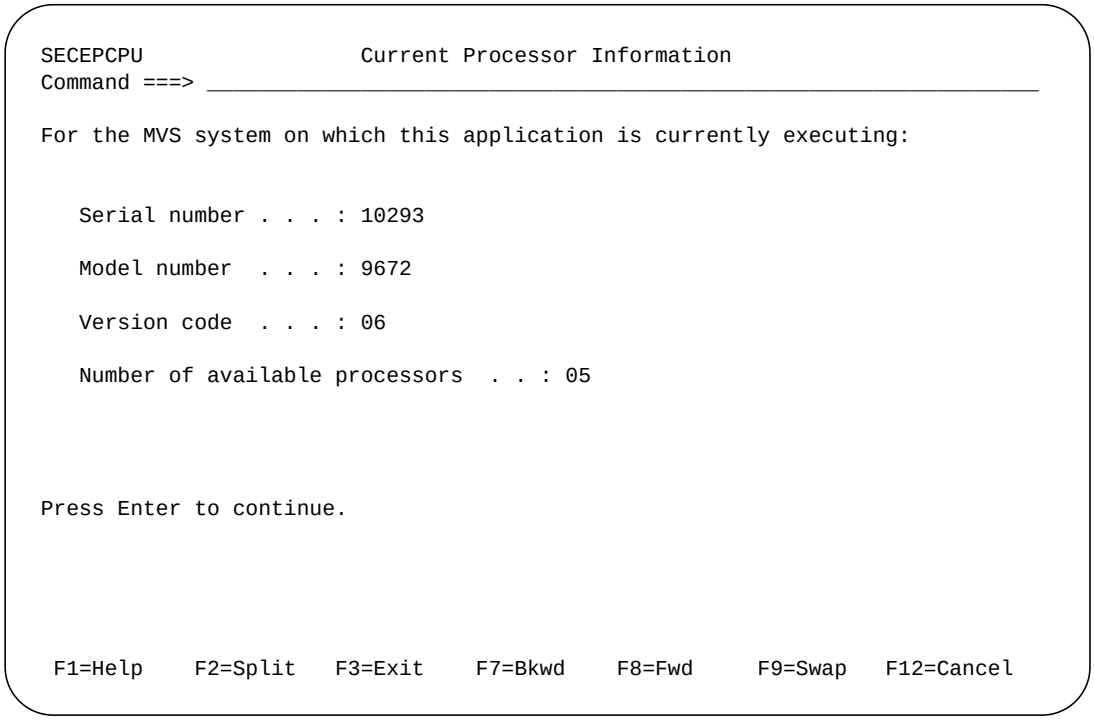
Step 1 On the Product Authorization Primary Menu (Figure A-1 on page A-11), select option 3.

Step 2 Press **Enter** to display the Current Processor Information panel (Figure A-13).

Step 3 When you finish reviewing the panel, press **F3** to exit the Product Authorization utility and return to the previous menu or panel.

See “Additional Information” on page A-27 for more an explanation of the information that is displayed on this panel.

Figure A-13 Current Processor Information Panel (SECEPCPU)


SECEPCPU Current Processor Information
Command ===>
For the MVS system on which this application is currently executing:
Serial number . . . : 10293
Model number . . . : 9672
Version code . . . : 06
Number of available processors . . : 05
Press Enter to continue.
F1=Help F2=Split F3=Exit F7=Bkwd F8=Fwd F9=Swap F12=Cancel

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Additional Information

This panel displays the CPU serial and model numbers for the processor on which TSO is currently running. It also displays the version code of the processor. The version code is the hardware representation of the submodel (for example, the 942 in ES/9000-942 or the 600 for a 3090-600 processor). If you experience problems, your BMC Software Technical Support Analyst may need this information.

Note: Version code X'FF' indicates that MVS is running as a VM guest. This X'FF' is not the real processor version code. To determine the real version code, run the LIST option of the Batch Product Authorization utility from an APF-authorized library. See Table A-6, “Control Statement Keywords,” on page 29 for more information.

This panel also displays the number of processors that are online to the current operating system. This information may apply to your BMC Software License Agreement.

Note: The information that is displayed on this panel might not refer to a computer on which you are licensed to run a BMC Software product. For example, if you log on to TSO on SYSA but run your BMC Software product on SYSB, your product-authorization entries might refer to SYSB.

Batch Product Authorization

This section describes the batch interface that is used for product authorization. To use the online interface, see “Online Product Authorization” on page A-10.

Using the batch interface, you can perform the following tasks:

- process a password
- obtain current product authorization and processor information

Running Batch Product Authorization

Figure A-14 on page A-28 is a sample JCL script for running batch product authorization. See “Additional Information” on page A-28 for descriptions of the information in the JCL script. You can find product-specific JCL samples in *HLQ*.CNTL or in the output JCL data set. Select the member *prd*CPUID, where the variable *prd* is the three-character product code, and then follow the instructions in the comments section of that member.

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Figure A-14 Sample JCL for Running Batch Product Authorization

```
//JJJJJJJJ JOB ...................
//*
//SECSEC3B EXEC PGM=SECSEC3B,PARM='prd'    <<<==== PRODUCT CODE
//STEPLIB  DD DSN=BMC.INSTALL.LOAD,DISP=SHR
//*
//SYSLIB   DD DSN=BMC.PRODUCT.LOAD,DISP=SHR <<==== REQUIRED
//SYSPRINT DD SYSOUT=*                      <<<==== REQUIRED
//*
//SYSIN    DD *
****  PROCESS AN ADD PASSWORD AND LIST RESULTS ****
PSWD=AE@,82G,91#,C7$  NEWCPUID=11111-9021
****  PROCESS A DELETE PASSWORD AND LIST RESULTS ****
PSWD=BE@,AD0,32$,7C#  OLDCPUID=31091-9121
****  PROCESS A REPLACE PASSWORD AND LIST RESULTS ****
PSWD=ARF,56C,##1,C7$  OLDCPUID=31001-3390 NEWCPUID=31091-3381
****  PROCESS A RESET PASSWORD
PSWD=123,456,789,ABC
****  PROCESS A TEMPORARY PASSWORD AND LIST RESULTS ****
PSWD=AE@,B32,#1C,D7#
****  REPORT THE PROCESSOR INFORMATION AND AUTHORIZATION ****
LIST
```

Additional Information

Information required for the JCL script are as follows:

JOB Varies, depending on your system.

EXEC Identifies the program (SECSEC3B) and passes the product code in the PARM field. Replace *prd* with the three-character product code.

STEPLIB DD Identifies the load library in which SECSEC3B resides. (This is optional if SECSEC3B resides in LINKLIST or is specified in JOBLIB.)

SYSLIB DD Identifies the product load library. Product-authorization tables are stored and updated in this data set.

SYSPRINT DD Enables the product to issue messages and output from the LIST control statement.

SYSIN DD Identifies the location of the control statements that define the actions the program is to take. See the following section, “Control Statements and Keywords” on page A-29 for a description of these control statements.

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Control Statements and Keywords

Some tasks require different input parameters depending on the type of password that you are installing. The sample JCL shown in Figure A-14 on page A-28 shows various tasks that you can perform by using the batch version of product authorization. You need to modify the JCL to include only the tasks that you want to perform.

The following syntax rules apply to the control statements:

- Control statements can begin in any column.
- Uppercase letters are required.
- You must insert at least one blank space between individual keywords and data fields. Multiple blank spaces are acceptable.
- To insert comments, type an asterisk (*) in column 1 of each line that contains the comment. Comments following keywords are not allowed.
- You cannot specify the LIST keyword on the same line as PSWD, NEWCPUID, and OLDCPUID.

Table A-6 describes the control statement keywords.

Table A-6 Control Statement Keywords

Keyword	Data	Explanation
PSWD	12-character password formatted as four fields of three characters each, separated by either a comma or a blank (See sample JCL on page A-28) Twelve continuous characters are also acceptable.	Valid characters are alphanumeric (excluding letters *I* and *O*). Valid special characters are =, +, and @. You can substitute the asterisk (*) for the “at” sign (@) when @ is not available on the keyboard.
NEWCPUID	five-digit serial number, followed by a hyphen and a four-digit model number	The serial number and model number must be hexadecimal characters separated by a single hyphen.
OLDCPUID	five-digit serial number, followed by a hyphen and a four-digit model number	The serial number and model number must be hexadecimal characters separated by a single hyphen.
LIST	not applicable	A report prints showing the contents of the product-authorization tables and information about the processor on which the job ran.

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Return Codes

You can receive any of the following return codes:

0 All requests completed successfully. See the SYSPRINT output for messages about each operation.

4 A LIST was requested, but no tables were in the load library.

8 An error prevented completion of all of your requests. See the SYSPRINT output for messages about the error and any completed operations.

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Appendix B BMC Software Product Authorization Messages

This appendix presents the following topics:

Error Messages B-2
Message Format B-2
Message Severity Codes B-3
Message Explanations B-3

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Error Messages

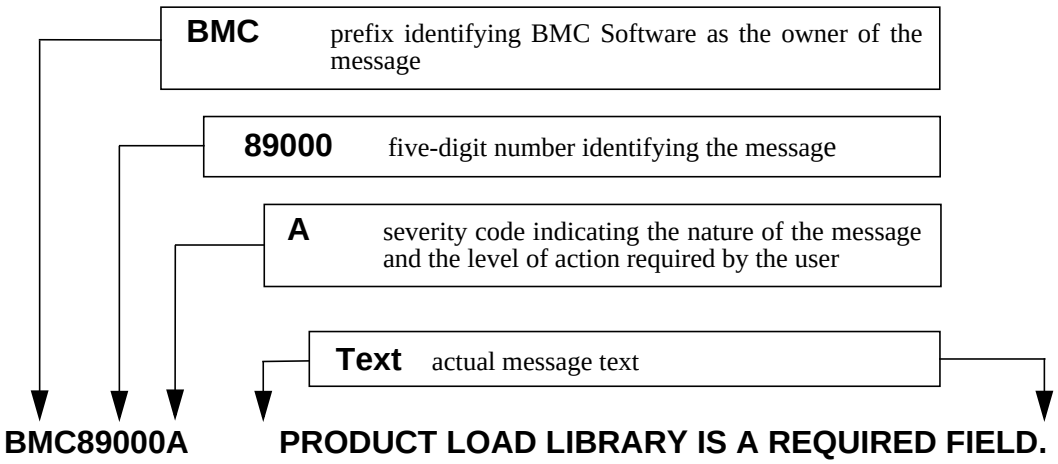
This section contains the text and explanations for all error messages issued by the ISPF interface and the batch interface of the Product Authorization utility.

The following information is provided for each message:

- *Explanation* explains the reasons why the product issued the message.
- *System Action* describes what the product does as a result of encountering the situation.
- *User Response* describes what you should do in this situation.

Message Format

All messages produced by this product consist of a message identifier and message text. These messages use the following format:


BMC
prefix identifying BMC Software as the owner of the message
89000
five-digit number identifying the message
A
severity code indicating the nature of the message and the level of action required by the user
Text
actual message text
BMC89000A
PRODUCT LOAD LIBRARY IS A REQUIRED FIELD.

Words in the message text that are italicized and enclosed in arrows (<*example*>) indicate variable text that will be determined when the message is issued.

Words in the message text that are enclosed in brackets and separated by vertical lines ([ON | OFF]) indicate actual values, one of which will be included at that point in the message.

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Message Severity Codes

Table B-1 lists the severity codes that the Product Authorization utility uses.

Table B-1 Message Severity Codes

Code	Meaning
A (action)	Immediate action is required.
E (error)	The function that you requested was not completed.
I (information)	Information only. No action is required.
R (reply)	You must reply to the message before the system can continue.
S (severe)	A severe error occurred.
W (warning)	The system is still operating, and no immediate action is required. When time is available, more investigation is needed.

All messages with a severity code *E* are sent to the system console. Some messages with a severity code *A* or *I* are also sent to the system console.

Message Explanations

The following error messages can be issued by the Product Authorization utility:

BMC89000A PRODUCT LOAD LIBRARY IS A REQUIRED FIELD.

Explanation: The product load library must be specified.

System Action: The action fails.

User Response: Enter the data set name for the product load library, and retry the action.

BMC89001A PASSWORD IS A REQUIRED FIELD.

Explanation: The action that you requested requires a password to be specified.

System Action: The action fails.

User Response: Enter the password, and retry the action. If you do not have a password, contact your BMC Software sales representative to acquire one.

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BMC89002E PASSWORD MAY NOT CONTAIN BLANK CHARACTERS.

Explanation: A blank is not a valid password character. Valid characters are A to Z (excluding *I* and *O*), 0 to 9, @, +, and =.

Note: Some nondomestic keyboards do not have the "at" sign (@). For this reason, the asterisk (*) has been designated as a synonym for @. These two characters (@ and *) can be used interchangeably when typing passwords.

System Action: The action fails.

User Response: Correct the password, and retry the action.

BMC89003A SERIAL NUMBER IS A REQUIRED FIELD.

Explanation: A valid CPU serial number has not been specified. Valid CPU serial numbers consist of five hexadecimal digits. No blanks or special characters are allowed.

System Action: The action fails.

User Response: Supply a valid CPU serial number, and retry the action.

BMC89004E SERIAL NUMBER FIELD CONTAINS INVALID CHARACTERS.

Explanation: The specified CPU serial number contains invalid characters. Valid CPU serial numbers consist of five hexadecimal digits. No blanks or special characters are allowed.

System Action: The action fails.

User Response: Supply a valid CPU serial number, and retry the action.

BMC89005E SERIAL NUMBER MAY NOT CONTAIN BLANK CHARACTERS.

Explanation: The specified CPU serial number contains a blank character and is invalid. Valid CPU serial numbers consist of five hexadecimal digits. No blanks or special characters are allowed.

System Action: The action fails.

User Response: Supply a valid CPU serial number, and retry the action.

BMC89006A MODEL NUMBER IS A REQUIRED FIELD.

Explanation: A valid CPU model number has not been specified. Valid CPU model numbers consist of four hexadecimal digits. No blanks or special characters are allowed.

System Action: The action fails.

User Response: Supply a valid CPU model number, and retry the action.

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BMC89007E MODEL NUMBER FIELD CONTAINS INVALID CHARACTERS.

Explanation: The specified CPU model number contains invalid characters. Valid CPU model numbers consist of four hexadecimal digits. No blanks or special characters are allowed.

System Action: The action fails.

User Response: Supply a valid CPU model number, and retry the action.

BMC89008E MODEL NUMBER MAY NOT CONTAIN BLANK CHARACTERS.

Explanation: The specified CPU model number contains a blank. Valid CPU model numbers consist of four hexadecimal digits. No blanks or special characters are allowed.

System Action: The action fails.

User Response: Correct the model number, and retry the action.

BMC89009E DATA SET NAME IS INVALID.

Explanation: The specified data set name is invalid. The data set does not exist, or it is not cataloged.

System Action: The action fails.

User Response: Correct the data set name, and retry the action.

BMC89010A OPTION IS A REQUIRED FIELD. VALID VALUES ARE 1, 2, 3, 4, OR 5.

Explanation: No menu option has been specified.

System Action: All functions are suppressed.

User Response: Type a valid option number in the selection field, and retry the action.

BMC89011E INVALID OPTION. PLEASE ENTER 1, 2, 3, 4, OR 5.

Explanation: The specified option is invalid.

System Action: All functions are suppressed.

User Response: Type a valid option number in the selection field, and retry the action.

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BMC89012E **OPTION IS REQUIRED. VALID VALUES ARE 1, 2, OR 3.**

Explanation: No menu option has been specified.

System Action: All functions are suppressed.

User Response: Type a valid option number in the selection field, and retry the action.

BMC89013E **<*command*> IS NOT A VALID COMMAND.**

Explanation: The specified command is invalid.

System Action: The command fails.

User Response: Correct the command, or remove the command from the command line.

BMC89019E **YOU MAY VIEW PRODUCT AUTHORIZATION FOR THIS PRODUCT FROM ONLY ONE LOGICAL SCREEN AT A TIME.**

Explanation: Product Authorization is being displayed on another panel.

System Action: Product Authorization is not displayed on this panel.

User Response: Use the panel currently displaying Product Authorization, or cancel that panel and resubmit the job on this one.

BMC89021E **ERROR DURING DYNAMIC ALLOCATION. LOAD LIBRARY WAS NOT ALLOCATED, ERROR CODE=<code>, INFO. CODE=<code>, DDNAME=SYSLIB.**

Explanation: The product-authorization interface and the Product Authorization utility were unable to dynamically allocate the product load library. The error codes and information codes returned by the DYNALLOC macro are described in the *Authorized Assembler Programming Guide* and in the appendixes of the ISPF help tutorial panels.

System Action: The action fails, or the batch (utility) job terminates.

User Response: Verify that the correct data set name for the product load library was specified and that the data set exists and is cataloged on DASD. Retry the action. If failure persists, contact BMC Software Product Support for assistance.

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BMC89022E **ERROR IN INPUT DSN. PLEASE CONTACT BMC PRODUCT SUPPORT.**

Explanation: The data set name for the product-authorization table was not found.

System Action: All functions are suppressed.

User Response: If the data set name is wrong, correct it and resubmit the job. If the data set name is correct, contact BMC Software Product Support for assistance.

BMC89029I **PRODUCT AUTHORIZATION TABLE WAS SUCCESSFULLY UPDATED. PRESS ENTER TO CONTINUE.**

Explanation: The table has been updated.

System Action: All functions have been processed.

User Response: Press **Enter** to continue.

BMC89050E **THE BMC PRODUCT CODE IS MISSING OR IS INVALID. CHECK PARM= ON JCL EXEC STATEMENT.**

Explanation: No product code (or an invalid product code) was specified in the PARM parameter of the batch JCL.

System Action: The password is not processed.

User Response: Add or correct the product code in the PARM parameter of the JCL EXEC statement. See “Control Statements and Keywords” on page A-29 for assistance with syntax.

BMC89051E **UNRECOGNIZABLE OR INCOMPLETE PARAMETER ON THE CURRENT INPUT CONTROL STATEMENT.**

Explanation: A parameter on the input control statement is incorrect.

System Action: The password is not processed.

User Response: Correct the parameter, and retry the action. See “Control Statements and Keywords” on page A-29 for assistance with syntax.

BMC89052E **MODEL NUMBER CANNOT BE LONGER THAN FOUR CHARACTERS.**

Explanation: A CPU model number of more than four characters was specified in the batch JCL. CPU model numbers cannot be longer than four characters.

System Action: The password is not processed.

User Response: Correct the model number, and retry the action. See “Control Statements and Keywords” on page A-29 for assistance with syntax.

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BMC89053E **SERIAL NUMBER MUST BE 5 HEXADECIMAL CHARACTERS WITH DELIMITING HYPHEN.**

Explanation: The CPU serial number must be followed by a delimiting hyphen (-).

System Action: The password is not processed.

User Response: Insert a hyphen between the serial number and the model number, and retry the action. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

BMC89054E **THE FIRST CHARACTER OF THE BMC PRODUCT CODE CANNOT BE A NUMBER. PLEASE CORRECT AND RERUN THE JOB.**

Explanation: The first character of the product code is invalid.

System Action: The password is not processed.

User Response: Correct the first character of the product code in the PARM field on the JCL EXEC statement. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

BMC89055E **THE PASSWORD MUST BE FORMATTED AS "PSWD=PPP,PPP,PPP,PPP" OR "PSWD=PPPPPPPPPPPP" OR "PPP PPP PPP PPP."**

Explanation: The password in the batch JCL has been specified incorrectly. The password can be specified as 12 consecutive characters without spaces or as four sets of three characters, with each set separated by a comma or a blank space.

System Action: The password is not processed.

User Response: Correct the password, and resubmit the job. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

BMC89057E **OPEN FAILURE FOR DDNAME=SYSIN.**

Explanation: The Product Authorization utility batch program was unable to open the data set specified by the SYSIN DD statement.

System Action: The batch program terminates.

User Response: Correct the data set name specified on the SYSIN DD statement, and resubmit the job. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

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BMC89058E MODEL NUMBER CONTAINS INVALID CHARACTERS.

Explanation: At least one character in the CPU model number specified in the batch JCL is invalid. Only hexadecimal characters (0 to 9 and A to F) are allowed in the model number.

System Action: The password is not processed.

User Response: Correct the model number, and resubmit the job. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

BMC89059E SERIAL NUMBER CONTAINS INVALID CHARACTERS.

Explanation: At least one character in the CPU serial number specified in the batch JCL is invalid. Only hexadecimal characters (0 to 9 and A to F) are allowed in the serial number.

System Action: The password is not processed.

User Response: Correct the serial number, and resubmit the job. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

BMC89060E THIS PASSWORD REQUIRES "NEWCPUID" KEYWORD FOR THE CPU ID TO BE ADDED.

Explanation: The Add password being processed requires specification of the NEWCPUID keyword, and none was specified.

System Action: The password is not processed.

User Response: Specify the NEWCPUID keyword on your input control statement. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

BMC89061E THIS PASSWORD REQUIRES "OLDCPUID" KEYWORD FOR THE CPU ID TO BE DELETED.

Explanation: The Delete password being processed requires specification of the OLDCPUID keyword, and none was specified.

System Action: The password is not processed.

User Response: Specify the OLDCPUID keyword on your input control statement. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

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BMC89062E **PASSWORD TO UPDATE AN EXISTING CPU ID ENTRY REQUIRES "OLDCPUID" KEYWORD.**

Explanation: The Update password being processed requires specification of the OLDCPUID keyword, and none was specified.

System Action: The password is not processed.

User Response: Specify the OLDCPUID keyword on your input control statement. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

BMC89063E **THIS PASSWORD REQUIRES "NEWCPUID" AND "OLDCPUID" KEYWORDS.**

Explanation: The Replace password being processed requires specification of the NEWCPUID and OLDCPUID keywords, and neither was specified.

System Action: The password is not processed.

User Response: Specify the NEWCPUID and OLDCPUID keywords on your input control statement. See "Control Statements and Keywords" on page A-29 for assistance with syntax.

BMC89064W **ERRORS CAUSED TERMINATION. SOME OR ALL REQUESTS DID NOT COMPLETE SUCCESSFULLY.**

Explanation: The input data contains one or more errors.

System Action: Processing terminates at the point of the error.

User Response: Examine the input control statements for errors. See "Control Statements and Keywords" on page A-29 for assistance with syntax. If you cannot locate the errors, contact BMC Software Product Support for assistance.

BMC89065I **ALL REQUESTS COMPLETED SUCCESSFULLY.**

Explanation: All requested functions have been processed.

System Action: The product load library is updated.

User Response: None. Information only.

BMC89069E **PERMANENT PRODUCT AUTHORIZATION TABLE'S GRACE PERIOD IS INVALID. PLEASE CONTACT BMC PRODUCT SUPPORT.**

Explanation: An error occurred, invalidating the table's grace period. The table must be rebuilt.

System Action: All functions are suppressed.

User Response: Contact BMC Software Product Support for assistance.

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BMC89070E **ISPF V3 REQUIRED. USE BATCH UPDATE PGM INSTEAD.**

Explanation: ISPF version 3 (or later) is required to run the online customer interface.

System Action: The online customer interface terminates.

User Response: Use the batch update program.

BMC89100E **INTERNAL ERROR, RC = <*return-code*>. PLEASE CONTACT BMC PRODUCT SUPPORT.**

Explanation: A processing error occurred.

System Action: The function is not performed.

User Response: Note the return code, and contact BMC Software Product Support for assistance.

BMC89101E **PASSWORD CONTAINS INVALID CHARACTERS.**

Explanation: The password contains one or more invalid special characters. The only special characters permitted are @, =, and +.

System Action: The password is not processed.

User Response: Correct the password, and resubmit the job.

BMC89102E **PASSWORD CONTAINS ILLEGAL CHARACTERS (I AND/OR O).**

Explanation: The password contains one or more of the letters *I* or *O*. These letters are not permitted in passwords.

System Action: The password is not processed.

User Response: Correct the password, and resubmit the job.

BMC89104E **PASSWORD DOES NOT MATCH SERIAL NUMBER AND MODEL NUMBER.**

Explanation: The specified password is not correct for the specified CPU serial number and model number; or (if the batch interface was used) the product code in the PARM statement is not correct. To obtain your CPU serial and model numbers, log on to the processor and perform one of the following actions:

- Select the **Display current processor information** option from the Product Authorization Primary Menu (see page A-11), and submit the product-authorization batch program with the LIST option (see page A-29).
- Issue the MVS operator command D M=CPU from the system console.

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System Action: The password is rejected.

User Response: Verify that the specified CPU serial number and model number are correct. If the numbers are incorrect, retry the action specifying the proper numbers. If the numbers are correct, contact BMC Software Product Support for assistance.

If the batch program was used, verify that the three-character product code specified in the PARM= statement is correct. If the product code is correct, but the job still fails, contact BMC Software Product Support for assistance.

BMC89105E PASSWORD IS INCORRECT. PLEASE VERIFY AND RE-ENTER THE PASSWORD.

Explanation: The specified password is not correct.

System Action: The password is rejected.

User Response: Verify that the password and the product code have been specified correctly and retry the action. If the password continues to be rejected, contact BMC Software Product Support for assistance.

BMC89106E COULD NOT FIND THE EXISTING CPU ID ENTRY THAT WAS TO BE DELETED.

Explanation: An attempt was made to delete an entry in the product-authorization table, but the entry could not be found. This error usually indicates that the wrong product library was specified.

System Action: No changes are made to the product-authorization table.

User Response: Verify that the correct product load library is specified and retry the action. You can view entries in the product-authorization table by selecting the **Display product authorization** option from the Product Authorization Primary Menu (see page A-11) or by submitting the product-authorization batch program with the LIST option (see page A-29).

BMC89107E ATTEMPTING TO ADD A CPU ID THAT IS ALREADY IN THE TABLE.

Explanation: This CPU is already authorized for this product.

System Action: The password is not processed.

User Response: Determine whether the CPU ID is correct. You may need to display current processor information (see page A-26).

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BMC89108W **PRODUCT IS NOT AUTHORIZED TO EXECUTE. PLEASE ENTER BMC-SUPPLIED PASSWORDS.**

Explanation: There are no authorized CPUs in the product load library.

System Action: The product does not run.

User Response: Use a password to add an entry for the correct processor to the product load library.

BMC89110I **PRODUCT AUTHORIZATION TABLE WAS SUCCESSFULLY BUILT/UPDATED. YOU ARE NOW AUTHORIZED TO EXECUTE THIS PRODUCT ON ANY PROCESSOR UNTIL *<mm/dd/yyyy>*. PRESS ENTER TO CONTINUE.**

Explanation: The product-authorization table has been modified to allow execution of this product temporarily (until the indicated date).

System Action: None.

User Response: None. Information only. If you have a permanent license for this product, contact your BMC Software sales representative to obtain a permanent license password.

BMC89111E **RC=<*n*> WHILE ATTEMPTING TO DECODE THE EXPIRATION DATE.**

Explanation: The Product Authorization utility was unable to decode the expiration date because of an internal error.

System Action: The action fails, or the batch job terminates.

User Response: Note the return code, and contact BMC Software Product Support for assistance.

BMC89112W **THERE ARE NO ENTRIES FOR LICENSED PROCESSORS.**

Explanation: There are no authorized CPUs in the product load library.

System Action: The product does not execute.

User Response: Use a password to add an entry for the correct processor to the product load library.

BMC89113E **DATA SET DOES NOT EXIST OR IS NOT CATALOGED.**

Explanation: The specified load library cannot be found.

System Action: The action fails, or the batch job terminates.

User Response: Correct the data set name for the product load library or catalog the data set, and retry the action.

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BMC89114E OBTAIN ERROR. DATA SET MAY BE ARCHIVED.

Explanation: The specified load library cannot be found and might be archived.

System Action: The action fails, or the batch job terminates.

User Response: Verify the data set name for the product load library or restore the data set, and retry the action.

BMC89115E DATA SET IS NOT A VALID LOAD LIBRARY.

Explanation: The specified load library is not a partitioned data set. The product-authorization interface and Product Authorization utility expect the product load library to be a partitioned data set.

System Action: The action fails, or the batch (utility) job terminates.

User Response: Verify that the data set name for the correct product load library was specified. The product load library should be a partitioned data set. If the data set is not partitioned, check to ensure that the product was correctly installed. Retry the action. If failure persists, contact BMC Software Product Support for assistance.

BMC89116E THIS TEMPORARY AUTHORIZATION PASSWORD CONTAINS AN EXPIRATION DATE THAT HAS ALREADY EXPIRED.

Explanation: To be valid, the expiration date for the temporary password must be equal to, or greater than, the current date.

System Action: The password is not processed.

User Response: Contact your BMC Software sales representative.

BMC89117E THE PRODUCT AUTHORIZATION TABLE IS FULL. NO NEW CPU IDS CAN BE ADDED.

Explanation: The maximum number of CPUs has been stored in this product-authorization table.

System Action: The password is not processed.

User Response: If some CPUs in the table are no longer being used, they can be deleted to make room for this CPU. Contact your BMC Software sales representative to obtain a Delete password. If no CPUs can be deleted, call BMC Software Product Support for assistance.

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BMC89118E TEMPORARY AUTHORIZATION PASSWORD DOES NOT CORRESPOND TO THE CURRENT BMC PRODUCT.

Explanation: The temporary authorization in your product-authorization library is for a product other than the one that you are attempting to execute.

System Action: The product does not execute.

User Response: Contact BMC Software Product Support for assistance.

BMC89119E I/O ERROR WHILE ATTEMPTING TO READ PRODUCT AUTHORIZATION TABLE (DDNAME=SYSLIB).

Explanation: The system is unable to read the product-authorization table.

System Action: All functions are suppressed.

User Response: After several attempts are made to read the table, the table might have to be rebuilt. Contact BMC Software Product Support for assistance.

BMC89120E COULD NOT FIND THE EXISTING CPU ID ENTRY THAT WAS TO BE REPLACED.

Explanation: An attempt was made to apply a Replace password, but the CPU to be replaced in the product-authorization table cannot be found.

System Action: The password is not processed.

User Response: The old CPU ID or the password was specified incorrectly. Correct the specification and retry the action. If failure persists, contact BMC Software Product Support for assistance.

BMC89121E PERMANENT PRODUCT AUTHORIZATION TABLE WAS NOT FOUND, BUT THE PASSWORD SPECIFIES A “DELETE” OR “REPLACE” ACTION.

Explanation: An attempt was made to apply a Delete password or a Replace password, but the system cannot locate a product-authorization table for this product.

System Action: The password is not processed.

User Response: Contact BMC Software Product Support for assistance.

BMC89122E ATTEMPTING TO ADD A NEW CPU ID TO A NEW TABLE, BUT SERIAL NUMBER AND MODEL NUMBER WERE NOT SPECIFIED.

Explanation: The CPU serial number and the model number are required before the password can be processed.

System Action: The password is not processed.

User Response: Add the CPU ID and the model number and resubmit the job.

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BMC89123E **PERMANENT PRODUCT AUTHORIZATION TABLE IS INVALID. PLEASE CONTACT BMC PRODUCT SUPPORT.**

Explanation: An error invalidated the product-authorization table. The table must be rebuilt.

System Action: All functions are suppressed.

User Response: Contact BMC Software Product Support for assistance.

BMC89124E **TEMPORARY PRODUCT AUTHORIZATION TABLE IS INVALID. PLEASE CONTACT BMC PRODUCT SUPPORT.**

Explanation: An error invalidated the product-authorization table. The table must be rebuilt.

System Action: All functions are suppressed.

User Response: Contact BMC Software Product Support for assistance.

BMC89125E **THIS PASSWORD IS NO LONGER VALID. IT CANNOT BE USED TO ACTIVATE OR CHANGE YOUR PRODUCT LICENSE. PLEASE CONTACT YOUR BMC SALES REPRESENTATIVE.**

Explanation: The password has expired.

System Action: The password is not processed.

User Response: Contact your BMC Software sales representative or BMC Software Product Support for assistance.

BMC89126E **I/O ERROR WHILE ATTEMPTING TO WRITE PRODUCT AUTHORIZATION TABLE (DDNAME=SYSLIB).**

Explanation: A write error occurred.

System Action: All functions are suppressed.

User Response: Verify that the data set name is correct and that the data set is partitioned. If you are unable to resolve the problem, contact BMC Software Product Support for assistance.

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BMC89127I **PROCESSOR WAS SUCCESSFULLY ADDED TO THE PRODUCT AUTHORIZATION TABLE. YOU ARE NOW AUTHORIZED TO EXECUTE THIS PRODUCT ON SERIAL NUMBER <*nnnnn*>, MODEL NUMBER <*mmmm*>. PRESS ENTER TO CONTINUE.**

Explanation: The Add password has been processed. The product-authorization table was modified to allow operation of this product on the CPU with the serial number and model numbers indicated.

System Action: None.

User Response: None. Information only.

BMC89128I **PROCESSOR (SERIAL NUMBER <*nnnnn*>, MODEL NUMBER <*mmmm*>) WAS SUCCESSFULLY DELETED FROM THE PRODUCT AUTHORIZATION TABLE. PRESS ENTER TO CONTINUE.**

Explanation: The Delete password has been processed. This product can no longer be executed on the CPU with the serial and model numbers indicated in the message.

System Action: None.

User Response: None. Information only.

BMC89129I **PROCESSOR WAS SUCCESSFULLY REPLACED IN THE PRODUCT AUTHORIZATION TABLE. YOU ARE NOW AUTHORIZED TO EXECUTE THIS PRODUCT ON SERIAL NUMBER <*nnnnn*>, MODEL NUMBER <*mmmm*>. PRESS ENTER TO CONTINUE.**

Explanation: The Replace password has been processed. The CPU with the serial and model numbers indicated is now authorized to use this product.

System Action: None.

User Response: None. Information only.

BMC89130I **PROCESSOR (SERIAL NUMBER <*nnnnn*>, MODEL NUMBER <*mmmm*>) WAS SUCCESSFULLY MODIFIED IN THE PRODUCT AUTHORIZATION TABLE. PRESS ENTER TO CONTINUE.**

Explanation: The Modify password has been processed.The product-authorization table has been modified for the CPU with the serial and model numbers indicated.

System Action: None.

User Response: None. Information only.

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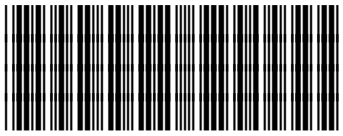
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